EZSeries Touchpanel
EZSeries Textpanel
EZSeries TouchPLC
EZSeries TextPLC
EZMarquee
EZPLC & EZI/O
EZ Touchscreen CE Computer
EZCE Touchpanel
EZMonitor

336 pages of the most SENSIBLE Automation Products

Designed and built in USA by AVG

EZ Series Touch Panel Software Manual

Manual Part Number EZ-PANELEDIT

Revision A

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WARNING!

Programmable control devices such as EZ Series Touch Panel are not fail-safe devices and as such must not be used for stand-alone protection in any application. Unless proper safeguards are used, unwanted start-ups could result in equipment damage or personal injury. The operator must be made aware of this hazard and appropriate precautions must be taken.

In addition, consideration must be given to the use of an emergency stop function that is in dependent of the programmable controller.

The diagrams and examples in this user manual are included for illustrative purposes only. The manufacturer cannot assume responsibility or liability for actual use based on the diagrams and examples.

CAUTION

Do not press the EZ Series Touch Panel touchscreen with any sharp objects. This practice may damage the unit beyond repair.

Trademarks

This publication may contain references to products produced and/or offered by other companies. The product and company names may be trademarked and are the sole property of their respective owners. EZ Automation disclaims any proprietary interest in the marks and names of others.

Manual Part Number EZ-PANELEDIT

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Table of Contents

EU Information ix
EZ Series Touch Panel Editor x
Compatibility of Software x
EZ Series Touch Panel Editor Enhancements x
Enhancement for AB Drivers xi
New PLC/Drivers added xi

Chapter 1
Manual Organization 2
Introduction 3
What you need to get started 3
Hardware 3
Software 3
Need HELP? 4
Onscreen HELP 4
Fly-Over HELP 4
PLC HELP 4
Technical Support 4
Warranty Repairs 4
Out of Warranty Repairs 4
EZ Series Touch Panel Models 5
6-inch Monochrome Models 5
6-inch Color Models 6
8-inch Color Models 7
10-inch and 15-inch Models 8
Features 9
PLCs Supported by EZ Series Touch Panel 10
PLC Cable Part Numbers 11
.....
EZ Series Touch Panel Editor Programming Software 12
Installing the Software 12
Installation Screens 12
EZLaunch Pad 15

Chapter 2
Tutorial — Configure PLC 18
Tutorial — Create a Project 19
Step 1 19
Step 2 21
Step 3 28

Chapter 3
Project Setup 32
Decide now if you want to work ON-LINE or OFF-LINE... 32
Step 1 Project Information 33
SELECT ACTION 33
Edit Program OFF-LINE (Write to Panel Later) 33
Read Program from Panel and Edit OFF-LINE 35
Edit Program ON-LINE 36
A QUICK REVIEW for “ENTER PROJECT INFORMATION” 37
Step 2 Design Your Screens 39
Step 3 Write Your Program to Panel 41

Chapter 4

Objects Menu 44
- Button Object 46
  - Protection Tab 48
  - Visibility/Details Tab 50
- Indicator Button Object 51
- Radio Buttons Object 53
- Switch Object 56
- Step Switch Object 58
- Tri-State Switch Object 60
- Numeric Entry Object 62
  - Scaling Tab 64
- Recipe Object 66
- Thumbwheel Object 69
- Indicator Light Object 71
- Numeric Display Object 73
  - Scaling Tab 75
- Text Objects 76
  - Static Text 76
  - Triggered Text 77
  - Lookup Text 79
    - Message Database 80
  - Dynamic Text 81
  - Text Entry 83
- Clock Objects 85
  - Analog Clock 85
  - Digital Clock 86
- Meter Object 87
  - Alarms Tab 89
  - Digital Display Tab 90
  - Scaling Tab 90
- Bar Graph Object 92
  - Digital Display Tab 93
  - Scaling Tab 94
- Line Graph Object 95
  - Pen Tab 97
  - XY Axis Tab 97
- PID Faceplate Object 99
  - Legends Tab 101
- Change Screen Object 102
- Alarm History Object 104
- System Objects 106
  - Increment/Decrement Hour 106
  - Activate Screen Saver 108
  - Adjust Contrast 109
  - Select Language 111
- Multi-state Indicator 112
  - Messages Tab 114
    - Embedding a Data Value 115
    - Copy Messages 118

Bitmap Objects....120
Dynamic Bitmap Object....120
To Edit a Bitmap....122
Bitmap Button....125
Multi-state Bitmap....128
Images Tab....130
Increment/Decrement Value Object....133
Report Object....135
View File Object....141
Unicode Text....143
Choosing International Languages....145
Unicode Indicator Light....147
Unicode Indicator Button....148
Unicode Multi-state Indicator....149
Single Position Animation....151
MultiPosition Animation....156

Chapter 5
Main Programming Screen....161
Title Bar....161
Main Menu Bar....161
Standard Tool Bar....162
Object Tool Bars....163
Basic Objects Tool Bar....163
Text Objects ToolBar....164
System Objects Tool Bar....164
Bitmap Objects Tool Bar....164
Draw Tool Bar....165
Panel Tool Bar....165
Status Bar....165
3 Easy Steps Tool Bar....166
Project Screens Explorer View....166
Programming Screen....168

Chapter 6
Reference....170
File Menu....170
Transfer to Panel...173
Edit Menu....175
Tag Name as Address....177
Objects Overlapping Warning....177
Overlapping Objects Information....177
Pick Attributes....178
Apply Attributes....178
Simulate Next and Previous States....179
Screen Menu....180
Draw Menu....185
Sizing a Bitmap in Symbol Factory....188
Panel Menu....189
Setup Menu....198
Tag Database....198
Tag Cross Reference....201
Message Database....215

Export Messages....217
Project Attributes....220
Project Description....230
Select PLC....230
Upgrade Firmware....230
Tag Verification....202
Export Tags....204
Import Tags....205
Importing ControlLogix Tags....208
Alarm Database....210
Export Alarms....212
Import Alarms....213
Import Messages....218
Printer Tab....220
Passwords Tab....221
Clock Tab....222
Panel to PLC Tab....223
How do I switch screens from a PLC?....225
PLC to Panel Tab....225
Language Tab....227
Alarm Protection Tab....228
Window Menu....232
Help Menu....233
Right Click Menus....234
Symbol Factory®....235

Appendix A Troubleshooting
Frequently Asked Questions (FAQs)....2
Troubleshooting....5
PLC Driver Error Messages....15
SIEMENS S7 MPI ADAPTER....
EZ-Ethernet Error Code Descriptions....
EZ Series Touch Panel Error Messages....61

Appendix B ASCII and ANSI Characters
EZ Series Touch Panel ASCII Characters....2
EZ Series Touch Panel ANSI Characters....5

Appendix C PLC Communications Setup
Allen-Bradley PLC Communications Setup....3
MicroLogix DF1 Full Duplex....3
MicroLogix DF1 Half Duplex....4
MicroLogix DH485/AIC....5
SLC 5/03, 5/04, and 5/05 DF1 Full Duplex....6
SLC 5/03, 5/04, and 5/05 DF1 Half Duplex....7
SLC 500, 5/01, 5/02 and 5/03 DH485/AIC....8
PLC5 DF1....9
Data Highway Plus....10
Remote I/O....12
Generic DeviceNet I/O Communications Setup....14
DirectLogic PLC Communications Setup....16
Generic EtherNet/IP Communications Setup....17

General Electric (GE) PLC Communications Setup....20
GE 90-30/90-70 SNPX....20
GE VERSAMAX....21
Mitsubishi PLC Communications Setup....22
Modicon PLC Communications Setup....23
OMRON C200 and C500 PLC Communications Setup....24
Generic Profibus-DP PLC Communications Setup....26
Siemens S7 MPI Adapter PLC Communications Setup....30
Entivity's Think & Do (WinPLC) Communications Setup....32
Aromat PLC....35
Control Techniques....36
Control Technology Corporation (CTC)....37
Idec....38
Mitsubishi CC Link....39
Siemens....40
Square D Symax....41
Texas Instruments....42
Modicon Communications Setup....43
Universal Ethernet: DF1 for AB, I/P for ControlLogix SRTP for GE and Modbus TCP/IP....44

Appendix D Setting COM1 for a Printer
Setting COM1 for Printer....2

EU Information

The EZ Series Touch Panel is manufactured in compliance with European Union (EU) Directives and carries the CE mark. EZ Series Touch Panel has been tested under CE Test Standard #EN55011, and is listed under UL File #E209355. The following information is provided to comply with EU documentation requirements.

Please NOTE: Products with CE marks perform their required functions safely and adhere to relevant standards as specified by EU Directives provided they are used according to their intended purpose and that the instructions in this manual are adhered to. The protection provided by the equipment may be impaired if this equipment is not used in accordance with this manual. Only replacement parts supplied by EZAutomation or its agents should be used.

Technical Support

Consult EZ Series Touch Panel Editor Programming Software Help or you may find answers to your questions in the operator interface section of our website @ www.EZAutomation.net. If you still need assistance, please call our technical support from 6 a.m. to Midnight CST at 1-877-774-EASY or FAX us at 1-877-775-EASY.

SELV Circuits

All electrical circuits connected to the communications port receptacle are rated as Safety Extra Low Voltage (SELV).

Environmental Specifications

Operating Temperature

6” White on Blue & Mono non-expandable.....0 to 45 °C
6” Color .....0 to 50 °C
6” Color TFT .....0 to 55 °C
8” Color .....0 to 50 °C
8” Color TFT .....0 to 55 °C
10” Color.....0 to 55 °C
15” Color.....0 to 55 °C

Storage Temperature

6” White on Blue & Mono non-expandable..... -20 to +60 °C
6” Color ..... -25 to +60 °C
6” Color TFT ..... -25 to +65 °C
8” Color .....-25 to +60 °C
8” Color TFT ..... -25 to +65 °C
10” Color..... -25 to +65 °C
15” Color..... -25 to +65 °C

Operating Humidity .....10 - 95% R.H>, noncondensing
Air Composition .....No corrosive gases permitted

Preventative Maintenance and Cleaning

No preventative maintenance is required. The EZ Series Touch Panel touchscreen should be cleaned as needed with warm, soapy water. See the EZ Series Touch Panel Hardware Manual (P/N EZP-PANEL-M) for a list of compatible/incompatible chemicals and compounds.

EZ Series Touch Panel Editor

The EZ Series Touch Panel product has been modified to offer new features in:

- Software
- Drivers

Compatibility of Software

The EZ Series Touch Panel Editor is compatible with your existing EZ Panels as well as the new EZ Series Touch Panel models. The EZ Series Touch Panel Editor version 4 provides many new features. These features include the following:

EZ Series Touch Panel Editor Enhancements

- **Projects saved in a convenient single file:** EZ Series Touch Panel Editor software saves screen projects in multiple files EZ Series Touch Panel ver. 4 software saves the projects in one single file making copying, moving or backing up projects much easier.
- **Monitoring of tags:** Now you can monitor tags on your PC for easy machine diagnosis.
- **Bitmap creation and editing from within the software:** EZ Series Touch Panel was probably the first panel editor allowing you to resize bitmaps from within the editor. With EZ Series Touch Panel Editor ver. 4, offers you additional bitmap editing features, such as creation, color change, cropping, etc.
- **EZPackager:** New EZ Series Touch Panel software incorporates a unique utility called EZPackager. EZPackager allows OEMs to distribute their projects to their end users, cutting time and cost for project maintenance. (See EZPackager User Manual.pdf in your EZ Series Touch Panel install directory)
- **Overlapping of Objects:** Save a great deal of screen real estate by making available a great deal of information on one screen at any given time.
- **Free Sizing of Touch Objects:** Finally, you can make all objects as large or as small as you want them to be, as the software no longer restricts you to the touch grid, making screen design easier and more functional.
- **Pick and Apply Styles:** When designing screens, there are many attributes assigned to objects, such as an object's color, shape, text size, text color... All these details in completing a "style" takes time! This feature allows you to copy and paste a style from one object to as many as you select.
- **Display of Tag Addresses on Objects:** The PLC addressing uses Tag names, so that you can associate meaningful, easy to remember names to the addresses. Additionally, tags are useful if you use different PLCs with the same HMI program. You only need to design the HMI program once! Just change the tag definitions to match the PLC you have to use - saving you a great deal of screen development and troubleshooting time.
- **Support for Importing New Image Formats:** JPEG, GIF, and ICO images are now supported, allowing you to easily import more images into your projects.
- **New 4,000 Symbol Library:** The EZ Series Touch Panel software provides an even larger library of pre-built objects allowing you to create great new graphical screens.
- **Report object:** Send reports from your application to your printer.
- **View File object added for EZCE Touchpanel:** Configure a button that when pressed, will launch a Windows CE File Viewer to view a Windows file. The File Viewer application launched can be

determined both manually and automatically.

Enhancement for AB Drivers

- Support for ST & Long File types in AB Drivers
- Support for full range of I/O and direct addressing of I/O for DF1 and Micrologix
- Support ControlLogix and Compact Logix Tag names
- Support for binary files (B3:0/0) using the shortcut method of B3/0, B3/1, and B3/2

New PLC/Drivers added

- Aromat
- Control Techniques - Unidrive 2-wire, 4-wire (binary)
- Control Technology Corporation (CTC) - CTC2600, 2700, and 5100 (CTC Binary)
- Idec - Computer Link
- Mitsubishi - CC Link (CC Link protocol)
- Siemens S7_200
- Square D Symax - 300 Series CPU, 400 Series CPU (Symax)
- Texas Instruments - TI5x5 Series, TI505, TI545-1102, TI545-1104
- Uni Telway - Telemecanique TSX 37 Micro (UNI-TE Version 1.1)
- **Universal Ethernet: Ethernet/IP, DF1 over Ethernet, Modbus TCP/IP, GE SRTP**

1

Introduction

In this chapter....

- Manual Organization
- Introduction
- What you need to get started
- Need HELP?
- Models
- Features
- PLCs Supported by EZ Series Touch Panel
- PLC Cable Part Numbers
- Programming Cable Part Number
- EZ Series Touch Panel Editor Programming Software Installation

Manual Organization

The EZ Series Touch Panel Editor Programming Software User Manual is arranged in chapters. A description of key information contained in each chapter is provided below.

Chapter	Description
1	**Introduction** Provides Manual Organization, and lists what you need to get started, hardware and software. Discusses how to get help with questions or problems you might encounter through Onscreen Help and Technical Support. Provides you with a table listing the various models, their part numbers and special features. Lists the important features of all EZ Series Touch Panel models. Lists the PLCs supported by the panels, by brand, model and protocol. Lists the part numbers for PLC cables and the programming cable. Tells how to install programming software.
2	**Tutorial** Provides instructions to create an example (or "demo") project. Discusses how to configure a PLC ladder logic program to use with the demo project. Takes you through the steps necessary to create an EZ Series Touch Panel project using the programming software. Shows you how to transfer the project to the panel, and testing the project once transferred.
3	**Project Setup** Discusses ON-LINE and OFF-LINE configuration options. Tells you how to set up a project by entering project information (Step 1). Discusses screen design (Step 2), and how to transfer the project to the panel (Step 3).
4	**Objects** Provides step-by-step instructions for configuring each of the EZ Series Touch Panel objects.
5	**Main Programming Screen** Familiarizes you with the EZ Series Touch Panel Editor Programming Software work area. Briefly identifies and describes the main features of the screen, where you will design your EZ Series Touch Panel operator interface screens.
6	**Reference** Provides more details on menu commands. Takes you through the main menu bar item by item, command by command, with instructions. Contains information on the various tool bars and the status bar. Describes right click menus and Screens Explorer view.
A	**Appendix A Troubleshooting** Aids in diagnosing problems you might encounter when installing or operating your EZ Series Touch Panel. Provides steps to take to isolate and correct problems. Lists panel error messages, programming software error messages, and PLC Driver Error messages.
B	**Appendix B Characters** Provides a list of the ASCII Characters supported by the EZ Series Touch Panel. This information may be useful when creating a Text Entry or Dynamic Text object.
C	**Appendix C PLC Communications Setup** Provides instructions on how to set up most PLC Types to communicate with the EZ Series Touch Panel.
D	**Appendix D Setting COM1 to Printer** Provides instructions on how to set COM1 on the EZ Series Touch Panel to "Printer."

Introduction

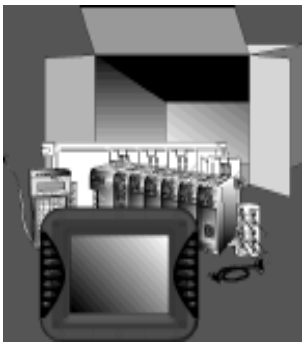
Install the EZ Series Touch Panel using the instructions in the Hardware Manual.

Program the EZ Series Touch Panel using the instructions in this Software Manual.

There are *two manuals* that you will need for installation — this manual, the EZ Series Touch Panel Editor Programming Software User Manual, and the EZ Series Touch Panel Hardware User Manual (P/N EZ-PANEL-M) shipped with your EZ Series Touch Panel touchpanel.

These manuals will take you through the steps necessary to get your EZ Series Touch Panel up and running in the shortest possible time. Although your familiarity with programmable graphic operator interface devices will determine how quickly you move through the steps — it's as easy as 1 — 2 — 3.

What you need to get started



Hardware

- EZ Series Touch Panel
- 24 Volt DC Power Supply (1.5 AMP or larger Slo-Blo input power fuse recommended)
- RS-232C Programming Cable (P/N EZ-PGMCBL)
- RS-232C or RS-422A/485A PLC Interface Cable (see page 11 for part numbers)
- PC requirements:
  - — IBM or compatible PC (Pentium 166 MHZ or better) with a mouse and separate serial port
  - — VGA display with at least 800 x 600 resolution (1024 x 768 recommended)
  - — Standard Windows 98/NT4.0/2000/XP Professional/ XP Home® Requirements
  - — CD ROM Drive

Software

- EZ Series Touch Panel Editor Programming Software (P/N EZ-PANELEDIT)

Need HELP?

PLEASE NOTE: The Troubleshooting section (Appendix A) should be able to help you with most problems you might encounter.

Onscreen HELP

One of the most important features of the EZ Series Touch Panel Editor Programming Software is the availability of context sensitive onscreen help. To access the Help windows, simply press the F1 function key while on the topic where you need help. For example, if you need help while working with screens, press the F1 function key while in that area and a popup window will be displayed. You may also click on the Help button located at the bottom of most dialog boxes to go to the help topic.

Fly-Over HELP

When the mouse cursor comes to rest over any tool bar or object button for a short while, a small window will appear containing a brief description of the function of that particular button. The window will disappear as soon as the cursor has been moved off the button.

PLC HELP

If you need help with the PLC to EZ Series Touch Panel Interface, consult the EZ Series Touch Panel Editor Programming Software Help. Each PLC Driver has a Help Topic that lists the error messages and provides an explanation for each. Also provided are PLC to EZ Series Touch Panel wiring diagrams.

Technical Support

Although most questions can be answered with EZ Series Touch Panel HELP or the manuals, you may find answers to your questions in the operator interface section of our web site @ www.EZAutomation.net. If you still need assistance, please call our technical support from 6 a.m. to Midnight at **1-877-774-EASY or FAX us at 1-877-775-EASY.**

Warranty Repairs

If your EZ Series Touch Panel is under warranty, **contact www.EZAutomation.net or call us @ 1-877-774-EASY.**

Out of Warranty Repairs

If your EZ Series Touch Panel is out of warranty, **contact EZAutomation's Service Department for an evaluation of repair costs @ 1-877-774-EASY**. You can then decide whether it is more economical to proceed with factory repairs or purchase a new panel.

EZ Series Touch Panel Models

6-inch Monochrome Models

Part Number	Description	User Memory	Field Expandable User RAM?	Nonvolatile Flash Backup Card Option for Program Backup?	PLC Drivers Upported?	NEMA
EZ-S6M-R	6” Mono with Standard Bezel	256KB	No	No	See Note below	NEMA 4, 4X
*EZ-S6W-RS	6” Mono White on Blue with Slim Bezel	256KB	No	No	All Serial Drivers	NEMA 1, FDA
*EZ-S6W-RSU	6” Mono White on Blue with Slim Bezel	256KB	No	No	ONLY Universal Ethernet	NEMA 1, FDA
EZ-S6M-RS	6” Mono with Slim Bezel	256KB	No	No	See Note below	NEMA 1, FDA
EZ-S6M-F	6” Mono with Standard Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus EZ Ethernet	NEMA 4, 4X
EZ-S6M-FH	6” Mono with Standard Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus AB DH+ and Remove I/O	NEMA 4, 4X
EZ-S6M-FS	6” Mono with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus EZ Ethernet	NEMA 1, FDA
EZ-S6M-FSH	6” Mono with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus AB DH+ and Remove I/O	NEMA 1, FDA
*EZ-S6M-FSD	6” Mono with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus DeviceNet	NEMA 1, FDA
*EZ-S6M-FSE	6” Mono with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Ethernet I/P	NEMA 1, FDA
*EZ-S6M-FSM	6” Mono with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus MB+	NEMA 1, FDA
*EZ-S6M-FSP	6” Mono with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Profibus	NEMA 1, FDA
*EZ-S6M-FST	6” Mono Grayscale with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus ModBus TCP/IP	NEMA 1, FDA
*EZ-S6M-FSC	6” Mono Grayscale with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus CC Link	NEMA 1, FDA
*EZ-S6M-FSU	6” Mono Grayscale with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY Universal Ethernet	NEMA 1, FDA
*EZ-S6M-ES	6” Mono Grayscale with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY EZ Series PLC	NEMA 1, FDA

EZAutomation EZ Series Touch Panel NEMA Ratings

The NEMA rating of all operator interface products in this manual relates to only the front bezel since only the front bezel is exposed to the external environment and the backend is enclosed inside an appropriately sealed enclosure used by the customer. The Touchpanels in this manual have either NEMA 1 FDA Compliant or NEMA 4, 4X (indoor) rating. Please note that the touchpanels that are rated NEMA 1 FDA Compliant can handle typical NEMA 4, 4X environments such as water splashing or hosedown. The only reason these panels do not have NEMA 4, 4X rating is because the plastic material used for NEMA 1 FDA Compliant models does not support the flame retardancy required for NEMA 4 models.

6-inch Color Models

In the table below are the 6-inch Color EZ Series Touch Panel models. If using an option board connector, you cannot use the PLC port at the same time to connect to another type PLC. The panel supports only one PLC driver at a time.

Part Number	Description	User Memory	Field Expandable User RAM?	Nonvolatile Flash Backup Card Option for Program Backup?	PLC Drivers Upported?	NEMA
EZ-S6C-K	6" STN Color with Standard Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY Direct Logic PLC	NEMA 4, 4X
EZ-S6C-KS	6" STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY Direct Logic PLC	NEMA 1, FDA
EZ-S6C-F	6" STN Color with Standard Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus EZ Ethernet	NEMA 4, 4X
EZ-S6C-FH	6" STN Color with Standard Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus AB DH+ and Remote I/O	NEMA 4, 4X
EZ-S6C-FS	6" STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus EZ Ethernet	NEMA 1, FDA
EZ-T6C-FS	6" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus EZ Ethernet	NEMA 1, FDA
*EZ-S6C-FSD	6" STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus DeviceNet	NEMA 1, FDA
*EZ-T6C-FSD	6" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus DeviceNet	NEMA 1, FDA
*EZ-S6C-FSE	6" STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Ethernet I/P	NEMA 1, FDA
*EZ-T6C-FSE	6" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Ethernet I/P	NEMA 1, FDA
EZ-S6C-FSH	6" STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus AB DH+ and Remote I/O	NEMA 1, FDA
EZ-T6C-FSH	6" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus AB DH+ and Remote I/O	NEMA 1, FDA
EZ-S6C-FSM	6" STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus MB+	NEMA 1, FDA
EZ-T6C-FSM	6" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus MB+	NEMA 1, FDA
EZ-S6C-FSP	6" STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Profibus	NEMA 1, FDA
EZ-T6C-FSP	6" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Profibus	NEMA 1, FDA
*EZ-S6C-FST	6" STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus ModBus TCP/IP	NEMA 1, FDA
*EZ-T6C-FST	6" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus ModBus TCP/IP	NEMA 1, FDA
*EZ-T6C-FSC	6" STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus CC Link	NEMA 1, FDA
*EZ-S6C-FSU	6" STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY Universal Ethernet	NEMA 1, FDA
*EZ-T6C-FSU	6" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY Universal Ethernet	NEMA 1, FDA
*EZ-S6C-ES	6" STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY EZPLC	NEMA 1, FDA
EZ-T6C-ES	6" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY EZPLC	NEMA 1, FDA

*Indicates NEW EZ Series Touch Panel Models.
NOTE: Suppots Automation Direct (Direct Logic) serial drivers including H2-WPLC-XX.

8-inch Color Models

In the table below are the 8-inch EZ Series Touch Panel models. If using an option board connector, you cannot use the PLC port at the same time to connect to another type PLC. The panel supports only one PLC driver at a time.

Part Number	Description	User Memory	Field Expandable User RAM?	Nonvolatile Flash Backup Card Option for Program Backup?	PLC Drivers Upported?	NEMA
EZ-S8C-F	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus EZ Ethernet	NEMA 4, 4X
EZ-T8C-F	8” TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus EZ Ethernet	NEMA 4, 4X
EZ-S8C-FH	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus AB DH+ and Remote I/O	NEMA 4, 4X
EZ-T8C-FH	8” TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus AB DH+ and Remote I/O	NEMA 4, 4X
EZ-S8C-FS	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus EZ Ethernet	NEMA 1, FDA
*EZ-S8C-FSD	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus DeviceNet	NEMA 1, FDA
*EZ-S8C-FD	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus DeviceNet	NEMA 4, 4X
*EZ-T8C-FD	8” TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus DeviceNet	NEMA 4, 4X
*EZ-S8C-FSE	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Ethernet I/P	NEMA 1, FDA
*EZ-S8C-FE	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Ethernet I/P	NEMA 4, 4X
*EZ-T8C-FE	8” TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Ethernet I/P	NEMA 4, 4X
EZ-S8C-FSH	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus AB DH+ and Remote I/O	NEMA 1, FDA
*EZ-S8C-FSM	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus MB+	NEMA 1, FDA
*EZ-S8C-FM	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus MB+	NEMA 4, 4X
*EZ-T8C-FM	8” TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus MB+	NEMA 4, 4X
*EZ-S8C-FSP	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Profibus	NEMA 1, FDA
*EZ-S8C-FP	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Profibus	NEMA 4, 4X
*EZ-T8C-FP	8” TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Profibus	NEMA 4, 4X
*EZ-S8C-FST	8” Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus ModBus TCP/IP	NEMA 1, FDA
*EZ-S8C-FT	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus ModBus TCP/IP	NEMA 4, 4X
*EZ-T8C-FT	8” TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus ModBus TCP/IP	NEMA 4, 4X
*EZ-S8C-FSC	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus CC Link	NEMA 1, FDA
*EZ-S8C-FC	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus CC Link	NEMA 4, 4X
*EZ-T8C-FC	8” TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus CC Link	NEMA 4, 4X
*EZ-S8C-FSU	8” Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY Universal Ethernet	NEMA 1, FDA
*EZ-S8C-FU	8” STN Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY Universal Ethernet	NEMA 4, 4X
*EZ-T8C-FU	8” TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY Universal Ethernet	NEMA 4, 4X
*EZ-T8C-E	8” TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY EZ Series PLC	NEMA 4, 4X

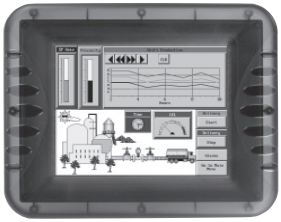
*Indicates NEW EZ Series Touch Panel Models.

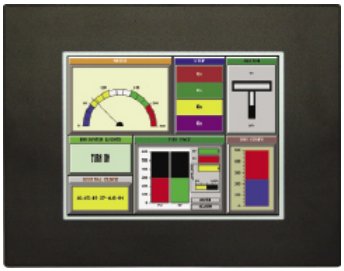
10-inch and 15-inch Models

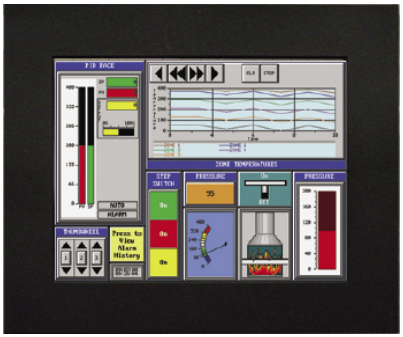
In the table below are the 10-inch and 15-inch EZ Series Touch Panel models. If using an option board connector, you cannot use the PLC port at the same time to connect to another type PLC. The panel supports only one PLC driver at a time.

Part Number	Description	User Memory	Field Expandable User RAM?	Nonvolatile Flash Backup Card Option for Program Backup?	PLC Drivers Upported?	NEMA
EZ-T10C-F	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All Serial Drivers	NEMA 4, 4X
EZ-T10C-FH	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus AB DH+ and Remote I/O	NEMA 4, 4X
EZ-T10C-FS	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus EZ Ethernet	NEMA 1, FDA
EZ-T10C-FD	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus DeviceNet I/O	NEMA 4, 4X
EZ-T10C-FSD	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus DeviceNet I/O	NEMA 1, FDA
EZ-T10C-FE	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Ethernet I/P	NEMA 4, 4X
EZ-T10C-FSE	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Ethernet I/P	NEMA 1, FDA
EZ-T10C-FSH	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus AB DH+ and Remote I/O	NEMA 1, FDA
EZ-T10C-FM	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Modbus Plus	NEMA 4, 4X
EZ-T10C-FSM	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Modbus Plus	NEMA 1, FDA
EZ-T10C-FP	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Profibus	NEMA 4, 4X
EZ-T10C-FSP	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus Profibus	NEMA 1, FDA
EZ-T10C-FT	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus ModBus TCP/IP	NEMA 4, 4X
EZ-T10C-FST	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus ModBus TCP/IP	NEMA 1, FDA
EZ-T10C-FC	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus CC Link	NEMA 4, 4X
EZ-T10C-FSC	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	All, plus CC Link	NEMA 1, FDA
EZ-T10C-FU	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY Universal Ethernet	NEMA 4, 4X
EZ-T10C-FSU	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY Universal Ethernet	NEMA 1, FDA
EZ-T10C-E	10.4" TFT Color with Slim Bezel	512KB	Yes, to 1 or 2 MB	Yes	ONLY EZPLC	NEMA 4, 4X
EZ-T15C-FS	15" TFT Color with Slim Bezel	1MB	Yes, to 1 or 2 MB	Yes	All, plus EZ Ethernet	NEMA 1, FDA
EZ-T15C-FSD	15" TFT Color with Slim Bezel	1MB	Yes, to 1 or 2 MB	Yes	All, plus DeviceNet I/O	NEMA 1, FDA
EZ-T15C-FSE	15" TFT Color with Slim Bezel	1MB	Yes, to 1 or 2 MB	Yes	All, plus Ethernet IP	NEMA 1, FDA
EZ-T15C-FSH	15" TFT Color with Slim Bezel	1MB	Yes, to 1 or 2 MB	Yes	All, plus AB DH+ and Remote I/O	NEMA 1, FDA
EZ-T15C-FSM	15" TFT Color with Slim Bezel	1MB	Yes, to 1 or 2 MB	Yes	All, plus Modbus Plus	NEMA 1, FDA
EZ-T15C-FSP	15" TFT Color with Slim Bezel	1MB	Yes, to 1 or 2 MB	Yes	All, plus Profibus	NEMA 1, FDA
EZ-T15C-FST	15" TFT Color with Slim Bezel	1MB	Yes, to 1 or 2 MB	Yes	All, plus Modbus TCP/IP	NEMA 1, FDA
EZ-T15C-FSC	15" TFT Color with Slim Bezel	1MB	Yes, to 1 or 2 MB	Yes	All, plus CC Link	NEMA 1, FDA
EZ-T15C-FSU	15" TFT Color with Slim Bezel	1MB	Yes, to 1 or 2 MB	Yes	ONLY Universal Ethernet	NEMA 1, FDA

Features







- Pre-built panel components for easy screen design
- Screen Objects such as: Toggle Switch, Slide Switch, Selector Switch, Throw Switch, Thumbwheel Object, Meters, PID Face plates, and Analog/Digital Clock
- Flash memory-based design for easy firmware upgrade
- Field expandable user RAM (not all models)
- Nonvolatile flash card option for user program backup (not all models)
- Color models support 128-color palette for components and bitmaps
- 16 shades of gray on monochrome models
- Multiple languages (up to 9)
- Two communications ports — Computer (RS-232C) and (RS-232C, RS-422A, or RS-485A)
- Up to 999 screens
- Built-in clock and calendar or reference the PLC clock
- Built-in soft keypad for numeric and alphanumeric entry
- Password Protection for every touch object
- Passwords for up to 8 user groups
- 16 level undo and redo
- Import bitmaps
- Serial Printer support
- 40-character tag names allow you to use meaningful names for PLC memory locations instead of cryptic PLC addresses
- New features including: overlapping of objects, free-sizing of touch objects, Pick and Apply Attributes, display address

PLCs Supported by EZ Series Touch Panel

PLC Brand	Model		Protocols Supported
EZAutomation	EZ Series PLC		EZ Protocol
Allen Bradley	MicroLogix 1000/1200/1500, SLC500,5/01, /02, /03		DH 485/AIC/AIC+
	MicroLogix 1000/1200/1500SLC 5/03, 5/04, and 5/05		DF1 Half Duplex/DF1 Full Duplex
	SLC 504, PLC5		DH+ (Option Card)
	PLC 5		DF1
	PLC 2, 3, and 5		Remote I/O (with DH+ Plus Option Card)
Aromat	Aromat		Mewtocol COM
Control Techniques	Unidrive 2-wire, 4-wire		Binary
Control Technology Corporation (CTC)	CTC 2600, 2700, and 5100		CTC Binary
DeviceNet	DeviceNet I/O		DeviceNet I/O (OptionCard)
Ethernet	Control Logic, Micro Logic, Compact Logic, GE Versamax		Ethernet I/P, SRTP, DF1, Modbus TCP/IP
General Electric	90/30 and 90/70 Versamax		SNPX/SNP
Idec	Idec		Computer Link
Mitsubishi	FX Series (all)		FX, Direct
	CC Link		CC Link Protocol
Modicon	984 CPU, Quantum 113 CPU, AEG Modicon Micro Series 110, CPU: 311-xx, 411-xx, 512-xx, 612-xx		Modbus RTU
	984 Series, Qunatum Series		Modicon Plus (Option Card)
Omron	C200, C500, CQM1, CPM1, CPM2		Host Link
Profibus	Profibus-DP		Generic Profibus DP(Option Card)
Direct Logic	DL105		K-Sequence, DirectNet, Modbus (Koyo Addressing)
	DL105		K-Sequence
	DL205	D2-230	K-Sequence
		D2-240	K-Sequence; DirectNet
		D2-250/D2-250 - 1/260	K-Sequence; DirectNet; ModBus (Koyo addressing)
		D2-240/250 w/DCM	DirectNet
	DL305	D3-330/330P	DirectNet
		D3-340	DirectNet
		D3-350	K-Sequence; DirectNet; ModBus (Koyo addressing)
		D3-350 w/DCM	DirectNet
	DL405	D4-430	K-Sequence; DirectNet
		D4-440	K-Sequence; DirectNet
		D4-450	K-Sequence; DirectNet; ModBus (Koyo addressing)
		All with DCM	DirectNet
Siemens	Siemens S7 MPI Adaptor		3964R
	Siemens S7_200		Siemens S7_200
Square D Symax	300 Series CPU, 400 Series CPU		Symax
Texas Instruments	TI5X5 Series, TI505, TI545-1102, TI545-1104		TBP (Transparent ByteProtocol) or NITP (Non-Intelligent Terminal Protocol)
Uni-Telway	Telemecanique TSX 37 Micro		UNI-TE (Version 1.1)
Other	H2- WinPLC (Entivity (Think & Do) V5.2 orlater, check for version compatability		Entivity (Think & Do) Modbus RTU (Serial Port)

PLC Cable Part Numbers

Cable Part Number	Cable Description
EZ-CBL	RS232C shielded cable to connect any EZ Series Touch Panel to EZ Series PLC. 15 pin D-shell male connector to 9 pin D-shell male connector.
EZ-2CLB	10' RS232C shielded cable to connect any EZ Series Touch Panel to DL05, DL06, DL105, DL205, D3-350 or D4-450 CPU. 15 pin D-shell male connector to RJ 12 modular connector.
EZ-2CBL-1	10' RS232C shielded cable to connect any EZ Series Touch Panel to a DL06, D2-250(-1) or D2-260 (bottom port) CPU. 15 pin D-shell male connector to 15 pin male HD.
EZ-3CBL	10' RS232C shielded cable to connect any EZ Series Touch Panel to a D3-340 CPU top or bottom port. 15 pin D-shell male connector to RJ11 modular connector.
EZ-4CBL-1	10' RS232C shielded cable to connect any EZ Series Touch Panel to DL 405 (top port) CPU. 15 pin D-shell male connector to 15 pin D-shell male connector.
EZ-4CBL-2	10' RS 232C shielded cable to connect any EZ Series Touch Panel to a D2-DCM, D3-350 (bottom port), a D3-232-DCU installed on D3-333 or D3-340, or DL 405 (bottom point) CPU.
EZ-MLOGIX-CBL	6' shielded cable to connect any EZ Series Touch Panel to an AB Micrologix 1000, 1200, or 1500 CPU. 15 pin D-shell male connector to 8 pin DIN connector
EZ-SLC-232-CBL	10' RS232C shielded cable to connect any EZ Series Touch Panel to an AB SLC 5/03, 5/04 or 5/05 CPU with DF-1 port. 15 pin D-shell male connector to 9 pin D-shell female connector.
EZ-PLC5-232-CBL1	10' RS232C shielded cable to connect any EZ Series Touch Panel to an AB PLC5 CPU with DF1 port. 15 pin D-shell male connector to 25 pin D-shell male connector.
EZ-DH485-CBL	10' RS232C shielded cable to connect any EZ Series Touch Panel to an AB SLC 500 CPU with a DH485 port and 747-A/C Module.
EZ-90-30-CBL	10' RS232C shielded cable to connect any EZ Series Touch Panel to GE Fanuc Series 90/30, 90/70 serial port using SNPX protocol. 15 pin D-shell male connector to 15 pin D-shell male connector.
EZ-MITSU-CBL	10' RS422 shielded cable to connect any EZ Series Touch Panel to Mitsubishi FX series CPU. 15 pin D-shell male connector to 25 pin D-shell male connector.
EZ-MITSU-CBL-1	10' RS422 shielded cable to connect any EZ Series Touch Panel to Mitsubishi FX series CPU. 15 pin D-shell male connector to 8 pin min. din.
EZ-S7MPI-CBL	10' shielded cable to connect any EZ Series Touch Panel to Siemens Simatic S7 series CPU. 15 pin D-shell male connector to 9 pin D-shell connector
EZ-OMRON-CBL	10' RS232C shielded cable to connect any EZ Series Touch Panel to Omron C200 or C500 with Hostlink protocol. 15 pin D-shell male connector to 25 pin D-shell male connector.
EZ-ARCOL-CBL	10' RS232C shielded cable to connect any EZ Series Touch Panel to Aromat PLC. 15 pin D-Shell male connector to 5 pin mini DIN male connector.
EZ-CTRLUNI-CBL	10' RS422 shielded cable to connect any EZ Series Touch Panel to Control Techniques Unidrive 4-wire. 15 pin D-Shell male connector to 9 pin D-shell female connector.
EZ-CTRLUNI-CBL-1	10' RS485 shielded cable to connect any EZ Series Touch Panel to Control Techniques Unidrive 2-wire. 15 pin D-Shell male connector to 9 pin D-shell female connector.
EZ-CTCBI-CBL	10' RS232 shielded cable to connect any EZ Series Touch Panel to Control Technology Corportation (CTC). 15 pin D-Shell male connector to RJ12.
EZ-IDECM-CBL	10' RS485 shielded cable to connect any EZ Series Touch Panel to IDEC Micro 3 PLC. 15 pin D-Shell male connector to 8-pin Mini DIN connector.
EZ-MODUNI-CBL	10' RS485 shielded cable to connect any EZ Series Touch Panel to Modicon Uni-Telway Telemecanique TSX 37 Micro PLC. 15 pin D-Shell male connector to 8 pin mini DIN connector.
EZ-MODRTU-CBL	10' RS232C shielded cable to connect any EZ Series Touch Panel to Modicon Modbus RTU. 15 pin D-Shell male connector to 9 pin D-shell male connector.
EZ-S7200-CBL	10' RS485 shielded cable to connect any EZ Series Touch Panel to Siemens S7 200 PLC. 15 pin D-Shell male connector to 9 pin D-shell male connector.
EZ-SYMAX-CBL	10' RS422 shielded cable to connect EZ Series Touch Panel to Square-D symax. 15 pin D-Shell male connector to 9 pin D-shell male connector.
EZ-TX505-CBL	10' RS232C shielded cable to connect any EZ Series Touch Panel connect to Texas Instrument 505 Series PLC. 15 pin D-Shell male connector to 9 pin D-shell female connector.
EZ-IDECS-CBL	10' RS232C shielded cable to connect any EZ Series Touch Panel to IDEC Micro Smart PLC. 15 pin D-Shell male connector to 8 pin mini DIN male connector.
EZ-TX545-CBL	10' RS422 shielded cable to connect any EZ Series Touch Panel to Texas Instrument 545-1102 series PLC. 15 pin D-Shell male connector to 9 pin D-shell male connector.
EZ-TX545-CBL1	10' RS422 shielded cable to connect any EZ Series Touch Panel to Texas Instrument 545-1104 PLC. 15 pin D-Shell male connector to 9 pin D-shell female connector.

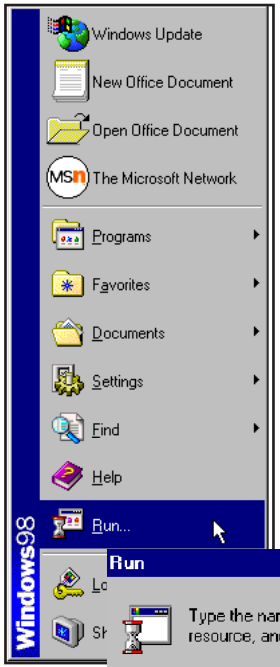
NOTE: See Appendix A for cable pinouts, or use the EZ Series Touch Panel Editor Programming Software (P/N EZ-PANELEDIT) Help Topics. For RS-422A connections to DirectLogic PLCs also see Appendix A.

EZ Series Touch Panel Editor Programming Software

EZ Series Touch Panel models are configured with software running on an IBM or compatible personal computer. This software is available through EZ Automation, part number EZ-PANELEDIT. The panel can be configured on-line or off-line (See page 3 for requirements).

Installing the Software

Perform the following steps to install the EZ Series Touch Panel Editor Programming Software onto your PC.



- Place the CD into your **CD ROM drive.** The install program should launch automatically. If it does not, perform the following steps.

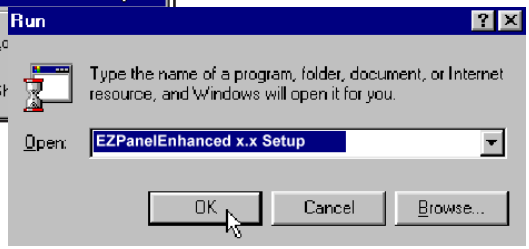
  1 From Windows click on the **Start** Button, and then click on **Run** from the menu. The **Run** dialog box will pop up.

  2 At the prompt type D:\ (or your CD ROM drive) setup.exe or click on the **Browse** Button and find the **Setup.exe** file for EZ Series Touch Panel Editor Programming Software.

  3 Click on the **OK** button to begin the installation. The EZ Series Touch Panel Editor Programming Software Installation Screen will appear.

- Follow the onscreen prompts to load the software. (Installation screens are shown, next page).

Installation Screens



This icon will appear on your desktop after installation.

Simply follow the onscreen prompts to install the software. You will select the destination folder where your software program will be installed. The default destination location is C:\Program Files\EZ Series Touch Panel. If you wish to select another destination, click on the Browse button, choose the destination and click on the Next > button.

Select whether to install the English or the Spanish version of EZ Series Touch Panel Editor Programming Software. Click on the Next> button.

To complete the installation, click on Finish > button. That's all there is to it! The EZ Series Touch Panel Icon shown above will appear on your desktop. Simply click on it to open the Programming Software!

NOTE: A different version number may appear depending on which version of the software you are installing.

Once you've finished installing the software, the screen below should appear. Open the software to view the EZLaunch Pad (see next page).

EZLaunch Pad

Overview
EZLaunch Pad is a convenient place to launch all EZAutomation software from one dialog box.

Distribution
EZLaunch Pad software is distributed with all EZAutomation software packages, such as EZ Series Touch Panel Editor, EZ Series Text Panel, EZ Series PLC and EZMarquee String generator. The software is also available on www.ezautomation.net as a free download.

Installation
To install this software please run the EZLaunchPadSetup.exe file. The software installs itself and places an icon onto your desktop for your convenience.

Function
To use EZLaunch Pad software, click onto the EZLaunch Pad icon. The software opens up a dialog box that lists all the installed and non-installed EZAutomation software on your computer. You may click on any of the installed programs to launch that software. The non-installed software is also listed but cannot be used.

If you have multiple versions of any installed EZAutomation software, the Launch Pad lists all versions for your convenience.

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2

Tutorial

In this chapter....

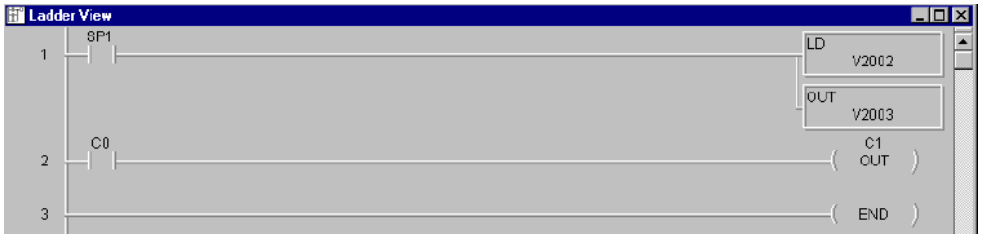
— Configure a PLC
— Create a Project

Tutorial — Configure PLC

For the purposes of this Tutorial, we will be using a DirectLogic® 05 Series Programmable Logic Controller (PLC), with K-Sequence Protocol. To configure the PLC we are using DirectSOFT® Programming Software. The purpose of this part of the tutorial is to show you how to configure your PLC to communicate with an EZ Series.

Connect the programming PC to the DL05 PLC. With DirectSOFT Programming Software running on your PC, perform the following steps.

1. Enter the Ladder Logic as shown in the example below. These PLC locations will be used by Tags that you will create in the EZ Series Editor Programming Software.



2. Save this program and transfer it to the PLC. Place the PLC in Run Mode.*

3. Exit DirectSOFT.

For this tutorial, we will be connecting the panel to PLC Port 1 of a DL05 (K-Sequence, 9600 Baud, Odd Parity). These are the settings that will be used when setting up the panel communications.

You have now configured the PLC to communicate with an EZ Series Project that you will create in the next section of this tutorial.

The following is a project tutorial. You've already configured your PLC to work with the EZ Series project you will be creating in this section. Now

*The mode switch of all DirectLogic PLCs must be in (TERM) position in order for the EZ Series to communicate with the PLC. Also, if it is necessary for the Ladder Logic of the PLC to be protected by a Password, a multi-level password must used. Please refer to your PLC user manual to see if your PLC supports this feature.

Tutorial — Create a Project

we'll take you through the process of creating a new project, placing objects on the screen, and transferring a project to EZ Series. This should help familiarize you with the EZ Series Editor Programming Software environment.

Let's assume you have the programming software installed on your PC (if you don't, go back to page 12 and install now). Connect EZ Series to your PC using the P/N EZ-PGMCBL cable. Connect EZ Series to your PLC using the appropriate panel to PLC cable.

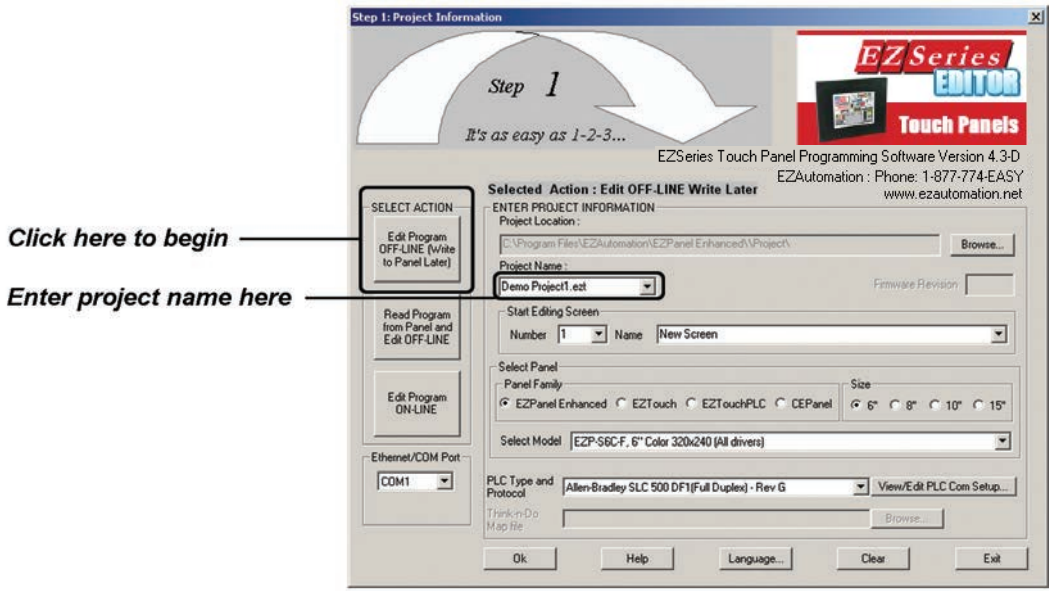
In **Step 1, Project Information**, you will be setting up your project by entering project information.

Step 1

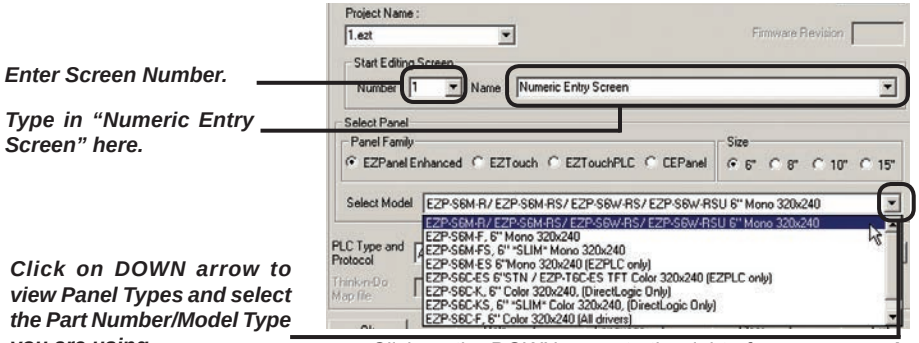
1. From the **Project Information** screen, click on the **Edit Program OFF-LINE (Write to Panel Later)** button.

2. Under **Project Name**, type in **Demo Project 1**. Press **Enter**. The primary EZ Series Program file has a ".ezt" suffix.

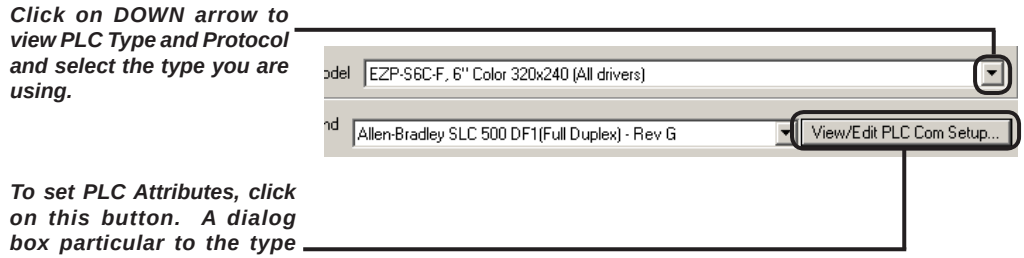
3. Under **Start Editing Screen**, leave the screen number as 1. Click in the field next to **Name**. Replace **New Screen** by typing in **Numeric Entry Screen**.
4. Click on the DOWN arrow to the right of the **Panel Type** field to view



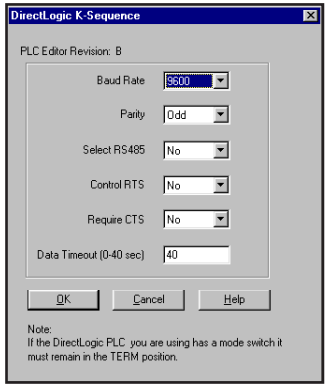
choices. Select the Panel Type you are using.



5. Click on the DOWN arrow to the right of **PLC Type and Protocol** to view the list. For the purpose of this Demo Program, select **DirectLogic K-Sequence**. (We are using a DirectLogic DL05 PLC with K-Sequence Protocol.)



6. Click on the **View/Edit PLC Com Setup** to edit the PLC Attributes. Set the attributes to match those in the **DirectLogic K-Sequence** attributes dialog box shown to the right. Click **OK**. (These settings must match the PLC Com Port settings. Check your PLC User Manual for port settings for your particular PLC.)

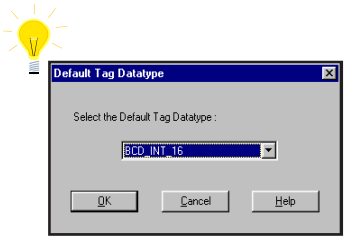


Step 1 is complete!

Step 2

You are now ready for **Step 2, Design Your Screens**. In Step 2 we will place 4 objects on the screen. You have already configured your PLC ladder logic for this Demo Project in the first part of the tutorial.

The EZ Series Editor Programming Software working environment is shown below. Tool bars provide easy access to all major programming functions and features. The objects shown below represent the touch buttons and displays that will be transferred to the panel and communicate with the PLC when this tutorial is completed.

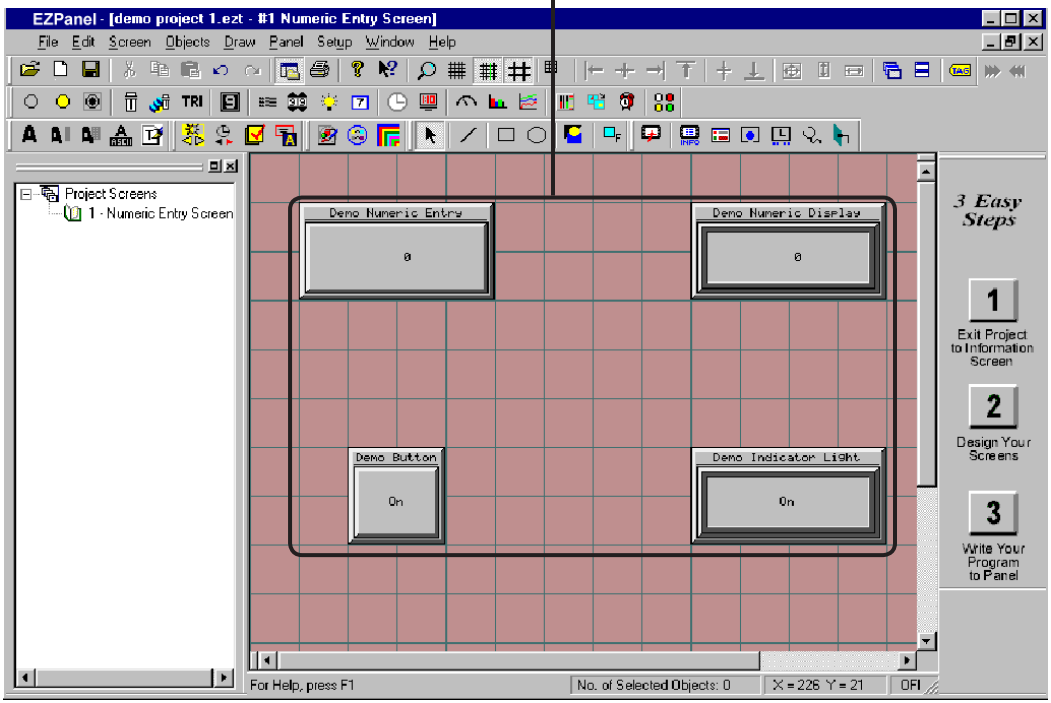


This software option remembers the last Data Type used, and it becomes the Default Data

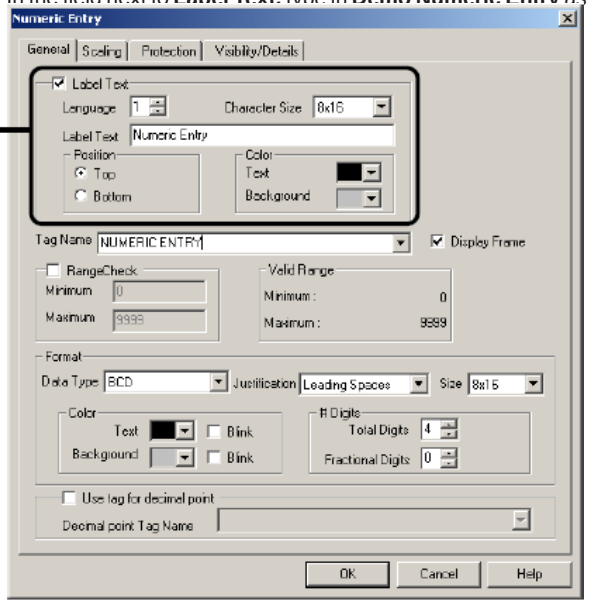
PROGRAMMING TIP: Before you begin placing objects on the programming screen, click on **Edit > Default Tag Data Type** and select **BCD_INT_16**. By selecting the default data type as BCD_INT_16 here, you won't have to select it later when configuring the tag details for the objects. Please note, however, that if the data type for an object requires something other than the default data type you have selected, it will show the required data type (i.e., Discrete).

1. Click on **Objects > Numeric Entry**. The following screen will appear.
2. Click on the box in front of **Label Text** to activate the object label.

These are the four objects you are about to configure in this tutorial.

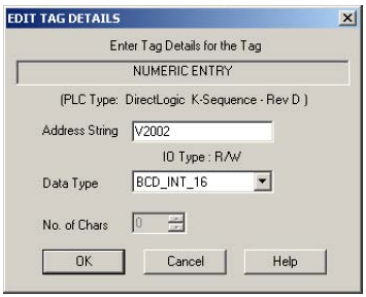


3. In the field next to **Label Text**, type in **Demo Numeric Entry** as shown above.



There are many more features that you may program, such as, Position of Label, Color of Text and Background, and Language, but for the purposes of this tutorial, we will use the Defaults.

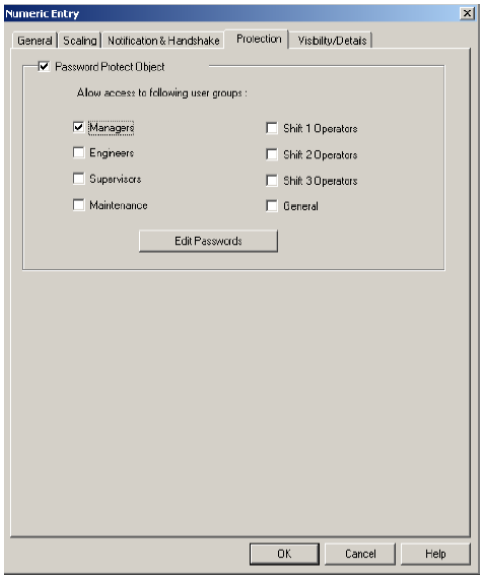
4. Click in the field next to **Tag Name** and type in **NUMERIC ENTRY**. Press **Enter**. The following screen will appear.
5. In the field next to **Address String**, type in **V2002**, as shown above. Select **BCD_INT_16** for the **Data Type**. Click **OK**.



PLEASE NOTE: If your panel is connected to multiple PLCs, use the Station Number to address a specific PLC. For example: 2–V2002 would address the PLC Station Number 2.

6. Click on the **Protection** tab. The following screen will appear.
7. Click on the box in front of **Password Protect Object**, and then click

on the box in front of **Managers**. Click on **OK**.



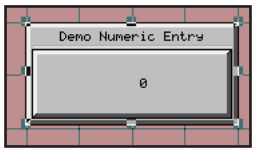
NOTES ON RESIZING AN OBJECT:

Drag the object to move, or drag a handle to resize, the object. The pointer changes to a four-way arrowhead (for moving), or a two-way arrow (for resizing).

Dragging a side handle changes the width or height only; dragging a corner handle changes the width and height simultaneously.

8. A cross-hair cursor will appear on the programming screen. Position cross-hair where you want the object to appear, and click once.

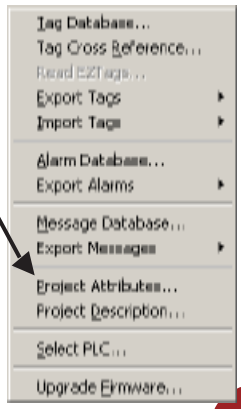
9. Grab the object by a handle and drag to resize it until the label displays in its entirety, as shown to the right.



10. Now go to the Main Menu Bar and click on **Setup > Project Attributes.**

11. Click on the **Passwords** tab. Under

From the Main Menu Bar, click on **Setup > Project Attributes > Passwords** to enter the password for the Numeric Entry Object.

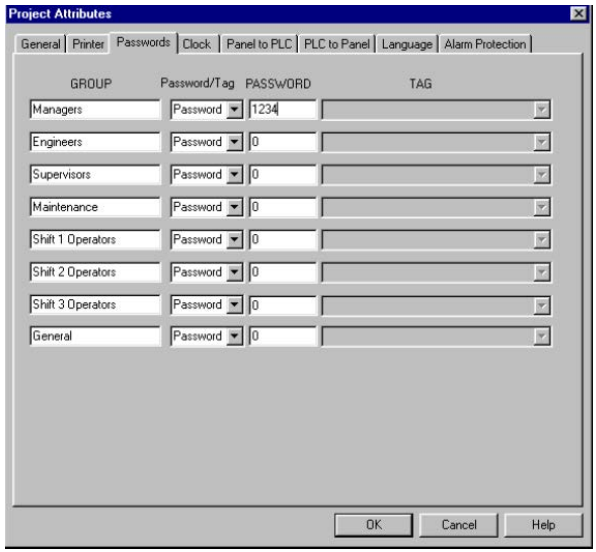


(You may have noticed that on the Numeric Entry Object Protection tab, there is a button that says Edit Passwords. You can use this button to enter the password for the object, but in this tutorial, we wanted to provide you with an example of how Project Attribute configuration relates to object configuration.)

PASSWORD for the **GROUP, Managers**, type in "**1234**". Click **OK**.

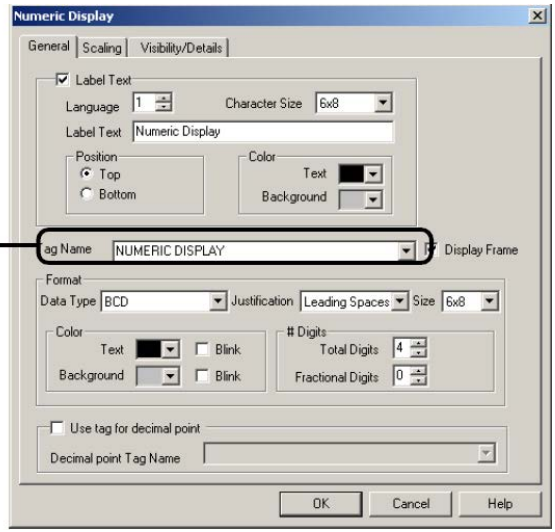
12. Next, we'll create a **Numeric Display** object. Click on **Objects > Numeric Display**. The following dialog box will appear.
13. Click on the box in front of **Label Text t**o activate the object label.
14. In the field next to **Label Text**, type in **Demo Numeric Display.**

Please Note: Once the password is entered for Managers, all objects that you configure for Protection at the "Manager" level, will now require the Password "1234".



15. Click in the field next to **Tag Name** and type in **NUMERIC DISPLAY**.

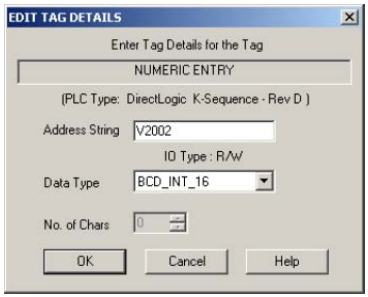
To EDIT TAG DETAILS, right click the mouse while the cursor is on Tag Name.



Press **Enter**. The following screen will appear.

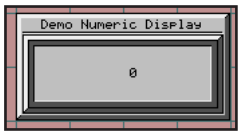
16. In the field next to **Address String**, type in **V2003**, as shown above. Select **BCD_INT_16** as the **Data Type**. Click **OK**.

17. A cross-hair cursor will appear on the programming screen. Position

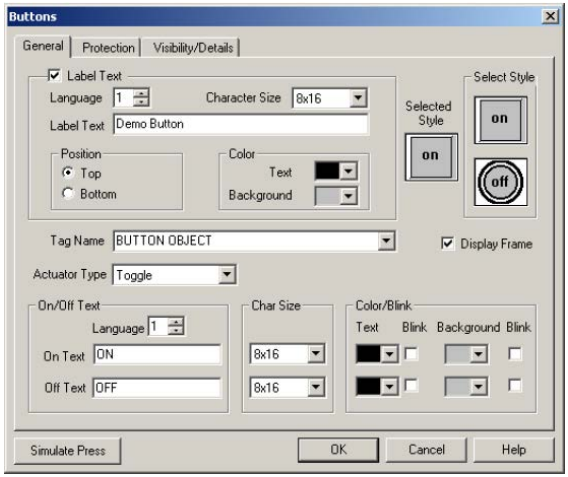


cross-hair where you want the object to appear, and click once.

18. Grab the object by a handle and drag to resize it until the label displays in its entirety, as shown below.
19. Next, we'll create a **Button** object. Click on **Objects > Buttons**. The following dialog box will appear.
20. Click on the box in front of **Label Text** to activate the object label.

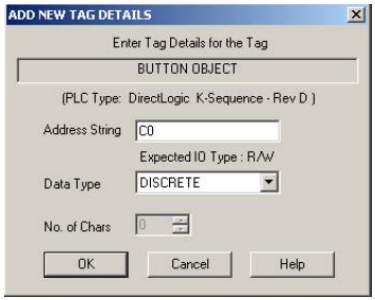


21. In the field next to **Label Text**, type in **Demo Button**.



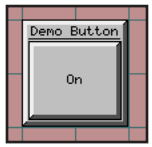
22. Click in the field next to **Tag Name** and type in **BUTTON OBJECT**. Press **Enter**. The following screen will appear.
23. In the field next to **Address String**, type in **C0**, as shown above. The **Data Type** will remain as **DISCRETE**. Click **OK**.

24. A cross-hair cursor will appear on the programming screen. Position where you want the object to appear (under the Numeric Entry object),



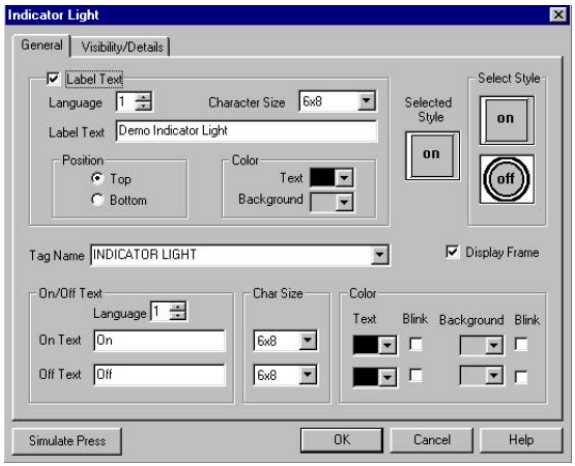
and click once.

25. Grab the object by a handle and drag to resize it until the label displays in its entirety, as shown to the right.



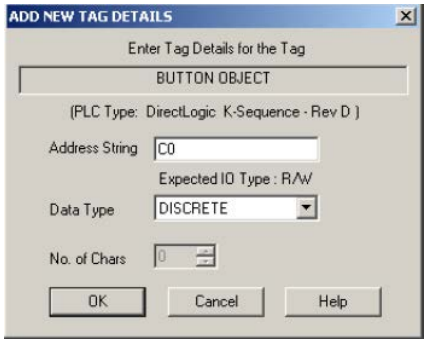
26. Next, we'll create an **Indicator Light** object. Click on **Objects > Indicator Lights**. The following dialog box will appear.
27. Click on the box in front of **Label Text** to activate the object label.

28. In the field next to **Label Text**, type in **Demo Indicator Light** as shown above.



29. Click in the field next to **Tag Name** and type in **INDICATOR LIGHT**. Press **Enter**. The following screen will appear.

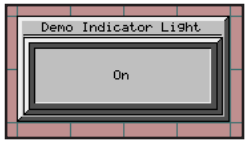
30. In the field next to **Address String**, type in **C1**, as shown above. The **Data Type** will remain as **DISCRETE**. Click **OK**.



31. A cross-hair cursor will appear on the programming screen. Position the cross-hair where you want the object to appear (under the Numeric Display object), and click once.

32. Grab the object by a handle and drag to resize it until the label displays in its entirety, as shown to the right.

33. Click on **File > Save Project**.



You've just completed Step 2, Design Your Screens! Now we will transfer Demo Project 1 to EZ Series.

You are now ready for **Step 3, Write Your Program to Panel. Demo Project 1** should look similar to that shown below.

1. Click on the **3** button **(Write Your Program to Panel)** as shown in the graphic below.

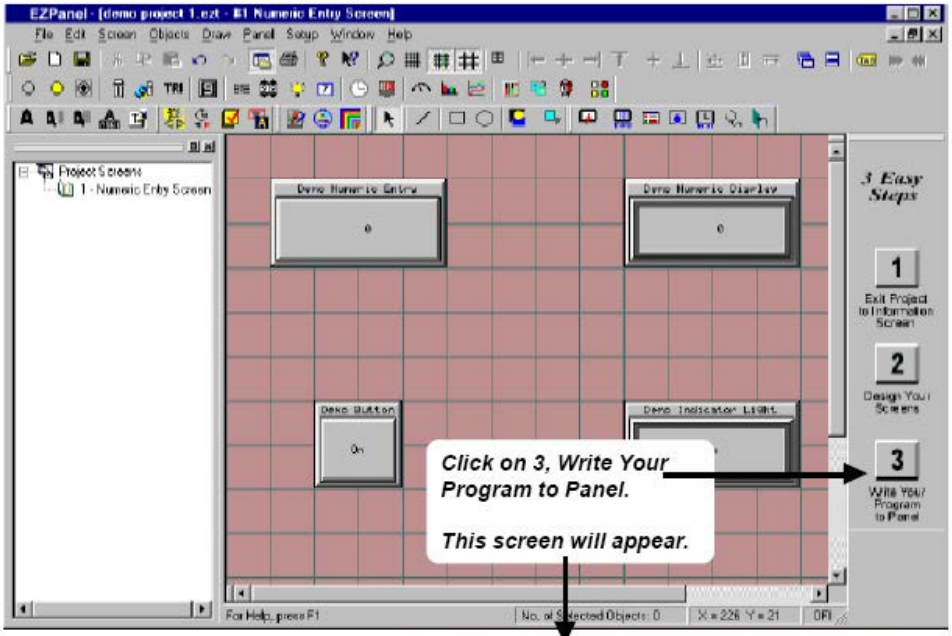
2. Click on the **Start** button at the bottom of the **Write Program to Panel** dialog box to begin transferring the project to the panel.
3. Your user program, **Demo Project 1**, should now be written to the EZ Series, and the screen you have created should be displayed on the panel.

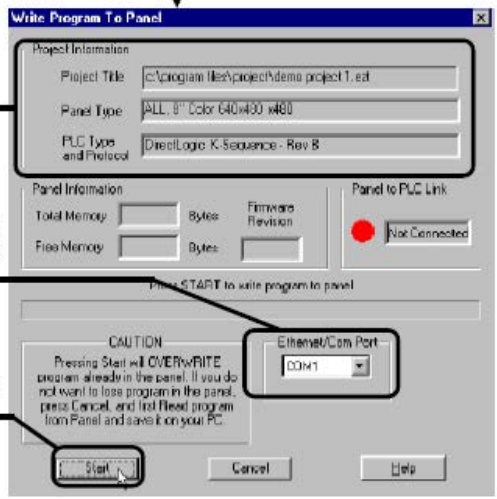
4. **Panel Information** will be updated with information it receives from

Step 3

establishing a link with the panel and the PLC.

5. To test the link, press the **Demo Numeric Entry** button on your EZ Series screen. A popup keypad similar to the one shown below should display.
6. Enter the Password "**1234**" on the keypad. Press **Enter**.
7. Another popup keypad similar to the one shown below will display.
8. Enter a number on the keypad by pressing the number keys. Press





Project Information is provided here. Make sure the information is correct before proceeding.

Ethernet/Com Port is shown here. Make sure the correct COM port is selected before proceeding.

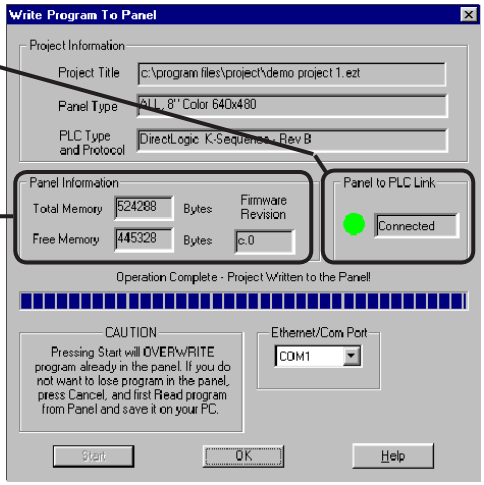
Click on Start button to write the program to the EZPanel Enhanced.

Enter. The keypad will disappear and the number you entered should appear on the **Demo Numeric Display** on your panel screen.

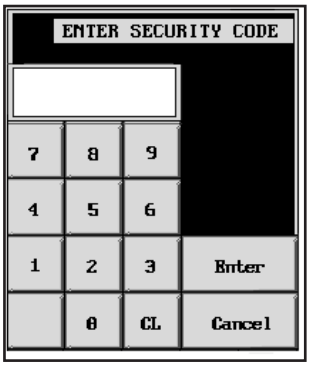
9. Press the **Demo Button** on your panel screen. It will change from Off to On. The **Demo Indicator Light** should change from Off to On, also.

The Panel to PLC Link will display a green dot next to the "Connected" message to indicate that a link between the panel and PLC is established.

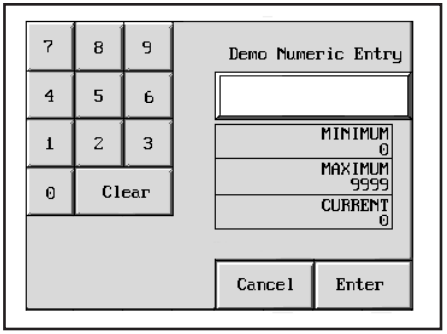
Panel Information will display the Total and Free Memory in Bytes. It will also display the Firmware Revision number — the revision of the EZ Series internal software.



You've just completed Step 3, Write Your Program to Panel!



Tutorial

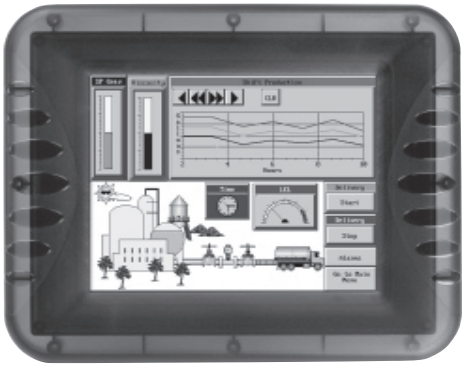


You have now successfully configured a PLC, created a user program, transferred it to the EZ Series and established communication between the PLC and panel.

This simple tutorial has taken you through the major steps to creating a working link between your application and an EZ Series. Of course, there are almost unlimited capabilities for creating a program unique to your application!

Changes are easy, too. Create your own Demo project based on this one, adding color, password protection, and dynamic graphics, for instance.

EZ Series and EZ Series Editor Programming Software are practical, versatile— and best of all — make it “EZ” for you to create a dynamic interface for your application!



3

Project Setup

In this chapter....

- ON-LINE and OFF-LINE Projects
- Project Setup
- Entering Project Information (Step 1)
- Designing Screens (Step 2)
- Write Your Program to Panel (Step 3)

Project Setup

Decide now if you want to work ON-LINE or OFF-LINE...

You may create a new project on your PC by working off-line (not connected to an EZ Series Touch Panel). You may also work on-line with an EZ Series Touch Panel unit to make changes to an existing project.

Working **off-line** you may use EZ Series Touch Panel Editor Programming Software to design your EZ Series Touch Panel unit in your office or home — or even while traveling. Your project becomes as portable as your laptop, and your EZ Series Touch Panel is not "down" while you are redesigning or making modifications as your unique application needs grow or change. Your project may be transferred to the EZ Series Touch Panel at any time. The transfer function allows you to select a project to be transferred to the Panel.

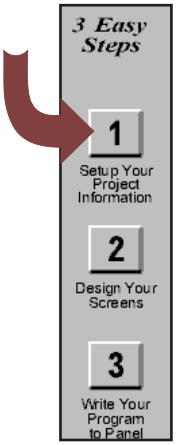
Working **on-line** is unique to EZ Series Touch Panels. Working in this mode allows you to make quick fixes or design changes to an installed EZ Series Touch Panel and its existing program. You can eliminate a step or two and save time by transferring these changes directly to the current opened screen. Now you can see the effect of the screen design changes you have made immediately, eliminating the traditional "edit-compile-download" cycle. Simply click on **Save Screen** or **Save Project** and all changes on the current opened screen will immediately be saved in the EZ Series Touch Panel.

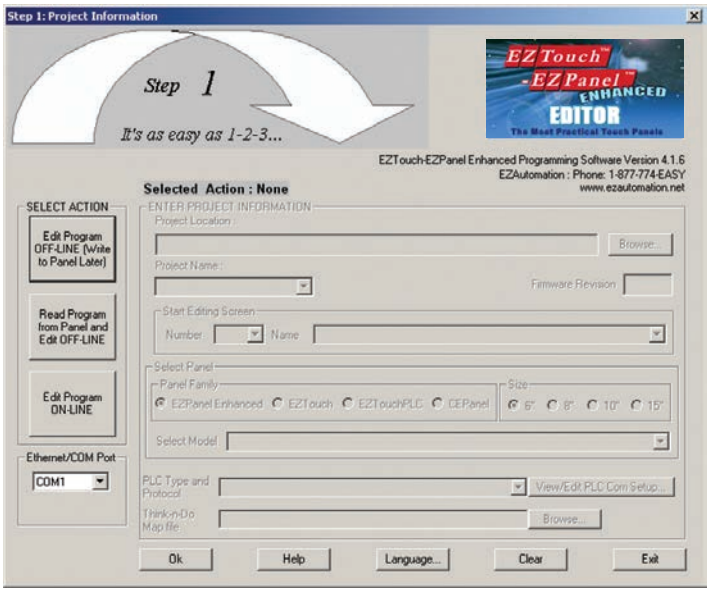
Most users will employ both methods at one time or another, but whether working off-line or on-line — you will certainly appreciate the versatility and accessibility provided by EZ Series Touch Panel and its easy-to-use programming software.

The next section takes you through the steps necessary to create a project and transfer it to EZ Series Touch Panel. EZ Series Touch Panel Editor Programming Software simplifies this process by using Windows-based architecture and lots of popup and pull down selections that guide you through the process to quickly build your screens and get you up and running in no time at all!

We recommend you go through the tutorial beginning on page 17 of this manual. You'll see how easy it is to get up and running!

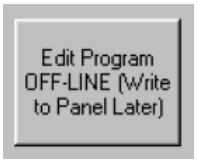
Step 1 Project Information





SELECT ACTION

Edit Program OFF-LINE (Write to Panel Later)



Under **SELECT ACTION**, click on one of the three "working mode buttons." If you want to work off-line (not connected to an EZ Series Touch Panel), click on the button labeled **Edit Program OFF-LINE (Write to Panel Later)**. You will use this mode when creating a new project.

1. From **Project Information** screen, click on the **Edit Program OFF-LINE (Write to Panel Later)** button.

2. Click on the **Browse** button if you want to navigate to another Directory or Folder where you will store your project. If you want to accept the default folder (where EZ Series Touch Panel Editor Programming Software resides), just enter the name of your new project in the empty field under **Project Name**.

3. Under **Start Editing Screen**, leave the screen number as **1**. Click in the field next to **Name** to highlight **New Screen**. Replace this by typing in the name of your first screen. If you haven't decided

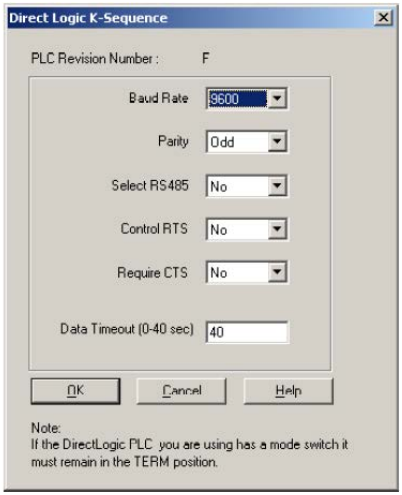
NOTE: If you change your mind and click on another SELECT ACTION button, a "confirm action" message will appear, just to make sure that this is what you intended to do. Click on Yes or No.

on a name, just leave it as is, you can change it later.

4. Click on the DOWN arrow to the right of the **Panel Type** field to view choices. Select the **Panel Type** you are using.

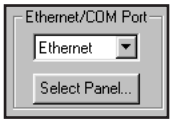
5. Click on the DOWN arrow to the right of **PLC Type and Protocol** to view the list. Select the PLC Type and Protocol you are using.

6. Click on the **View/Edit PLC COM Setup** to edit the PLC Attributes. A dialog box will appear that is particular to the type of PLC you have selected in the previous step. Set the attributes to match



your PLC. Click **OK**.

7. You should now be back to the **Project Information** screen. Check to ensure that your **Ethernet/COM Port** is set to match your PC (COM1, COM2, COM3 or COM4), or, if you want an Ethernet



connection, select **Ethernet**. A **Select Panel** button will appear (as shown below).

8. Click on the **Select Panel** button to begin Ethernet configuration.
Please note: For help with Ethernet configuration refer to the Ethernet Option Card Manual, P/N EZP-ETHERNET-M, or Ethernet Help topics.

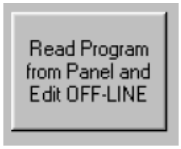
9. When finished with Ethernet Configuration, click on the **OK**

button.

10. You will return to the **Project Information** screen, click on the **OK** button to accept all settings.

You are now ready to begin configuring your first screen.

Read Program from Panel and Edit OFF-LINE



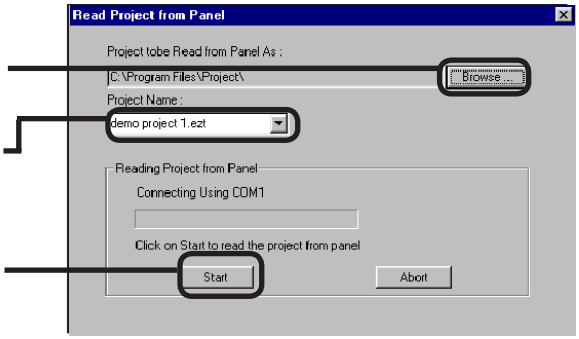
If you are connected to a panel and want to transfer a project from the panel to your EZ Series Touch Panel Editor Programming Software for editing, click on the **Read Program from Panel and Edit OFF-LINE button**. Any changes you make to the project will not take effect until you write the edited project to your panel.

1. From the Project Information screen, click on the **Read Program from Panel and Edit OFF-LINE**. The following screen will appear.
2. Click on the **Browse** button if you want to navigate to another

If not using the default directory, click on the Browse button to go to directory and folder where project will be stored.

Select or enter Project Name.

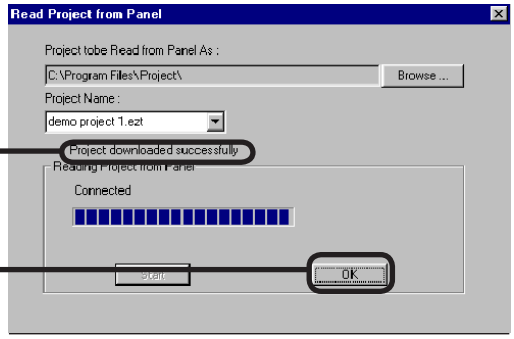
Click on Start button to Start Reading Project from Panel or Abort to quit.



Directory or Folder where you will store your program. If you want to accept the default folder (usually where the EZ Series Touch Panel Editor Programming Software resides), just enter the name that you desire for the project you are about to Read in the empty field under **Project Name**.

3. Click on the **Start** button to start reading the project from the panel.

4. A progress bar will appear, along with a text message, showing you the status of the panel read.
5. When finished, click OK. You will be taken back to the **Project**



The message "Project downloaded successfully" will appear when the program has finished downloading.

Click on OK to exit screen.

Information Screen. Notice that the project name entered now appears under **Project Name** in this screen.

6. Under **Start Editing Screen**, the **Name** and **Number** of Screen number 1 will appear. If you want to begin editing another screen, click on the down arrow next to Name or Number and select.

7. Click on the **OK** button to begin editing. You will go to the EZ Series Touch Panel Editor Main Programming Screen. You are now ready to edit the selected screen.

Edit Program ON-LINE

The third choice available is to make changes to the project while online. Click on the button labeled, **Edit Program ON-LINE**. The changes are effective each time **Save Screen** or **Save Project** is selected, reducing downtime. Click on **Save Screen** or **Save Project** and the changes will appear on the panel screen immediately. This is recommended when you need to make changes quickly to an existing user program without shutting down the system.

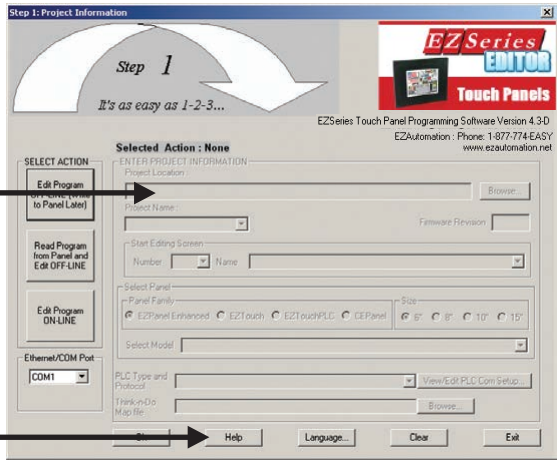
1. From the **Project Information** screen, click on the button labeled, **Edit Program ON-LINE**. The **Panel Type**, **PLC Type**, and **Firmware Revision** of the panel will soon display.

2. Under **Start Editing Screen**, screen **Number** 1 will appear with that screen's **Name**. If you want to begin editing a screen other than Number 1, click on the down arrow next to the **Number** field or the down arrow next to the **Name** field to select the screen you want to edit.

3. Click on **OK**. The screen you have selected will open on the main programming screen for you to make changes.

4. Click on **Save Screen** to download changes to the screen immediately. Click on **Save Project** to transfer all changes, including project attributes and databases. They will be immediately downloaded to the panel.

A QUICK REVIEW for "ENTER PROJECT INFORMATION"



Click on the Help Button at any-time for help.

Click on Clear to clear your entries and start over.

Click on Exit to quit without saving your selections, or click on OK to save and begin editing.

NOTE: Panels with an option card installed will have an "C, D, E, H, M, P, T, or U" on the end of the model part number to indicate this. The program loader doesn't list these under Panel Type, so just select the model part number without the "C, D, E, H, M, P, T, or U" that is closest to your panel part number. See step 8, next page.

Under **ENTER PROJECT INFORMATION** you will perform all or some of the following actions (depending upon the working mode you have selected):

1. **Project Location** will default to the directory where the EZPanel Software program is stored. If your project resides in another location, click on the **Browse** button to navigate to a different folder.

2. Under **Project Name**, click on the down arrow to view saved projects or enter the new project name.

3. **Start Editing Screen** allows you to select the screen that you want to begin editing. To have the project open to the screen you wish to edit, click on the down arrow to select the **Name** or the **Number** of the screen. If it is a new project, the screen will default to screen 1 with <New Screen> in the Name field. Replace this with whatever name you wish or wait until later and rename.

4. The field **Panel Type**, allows you to select or change your panel type.

   If you are connected to the panel (editing project on-line), the **Firmware Revision** of the panel's internal software will be displayed.

Please NOTE:
PLC compatibility is always being updated. If you don't see your type PLC and protocol, visit our website at www.EZAutomation.net to see if your PLC driver is now available to download.

5. **PLC Type and Protocol** allows you to further define your project by selecting the PLC used in your application and the protocol it uses. Click on the down arrow for a list of the available PLC types.

6. Click on the **View/Edit PLC COM Setup** button to display the PLC Attributes. The attributes screen particular to the PLC and Protocol type you have selected will appear. You may change attributes from this screen.

7. If you are using a **Think-n-Do Map File** for Automation Direct, click on the Browse button to go to the directory or folder where the map file resides.

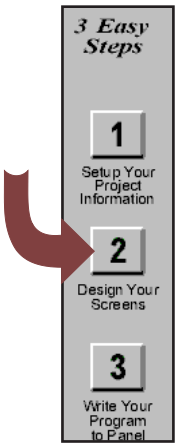
   The map file is simply a text delimited file that resides in any Think-n-Do project. The EZ Series Touch Panel Editor is set up to pull tag names from your Think-n-Do project. This frees the user from having to remember these tag names.

   The map file will load into the project's **Tag Database**. **Tag Database Log View** will open if there are problems. You may correct any problems from within the Think-N-Do map file or the Tag Database.

8. If you are using an EZ Series Touch Panel unit with an Option Card installed, the Model Part Numbers for your unit have a "C, D, E, H, M, P, T, or U" on the end to designate "C" for Mitsubishi CC Link, "D" for Generic DeviceNet I/O, "E" for Generic Ethernet I/P, "H" for Allen Bradley Data Highway Plus/Remote I/O, "M" for Modicon Modbus Plus, "P" for Siemens Profibus, "T" for Modicon Modbus TCP/IP, "U" for Universal Ethernet (Ethernet/IP, DF1 over Ethernet, Modbus TCP/IP, and GE SRTP. These option card designation letters do not appear on all model types where an option card is available when you are selecting your **Panel Type** on the **Project Information** screen. Just click on the model part number **without the "C, D, E, H, M, P, T, or U" on the end** that matches your panel size. In other words, the program loader doesn't see any differences in panel type between an EZ-S8C-FH (with A-B DH+ option card installed) and an EZ-S8C-F, so you will select **ALL, 8" Color, 640x480**. Any differences between the units are configured when you select the **PLC Type and Protocol** as Mitsubishi CC Link, Generic DeviceNet I/O, Generic Ethernet/IP, Allen-Bradley Remote I/O, Modicon Modbus Plus, Siemens Profibus, Modicon Modbus TCP/IP, or Universal Ethernet (Ethernet/IP, DF1 over Ethernet, Modbus TCP/IP, GE SRTP).

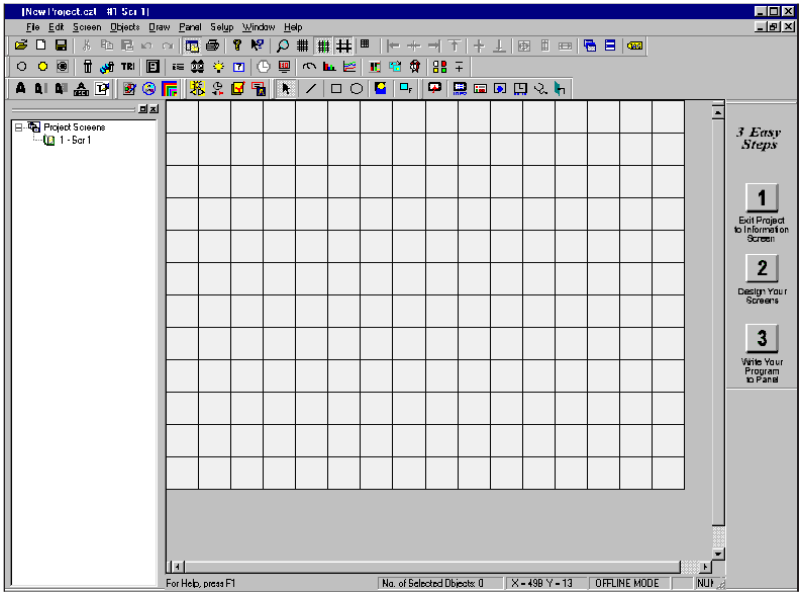
Once you click on **OK**, the project will open to the screen you have selected and you may begin creating or editing your project!

Step 2 Design Your Screens

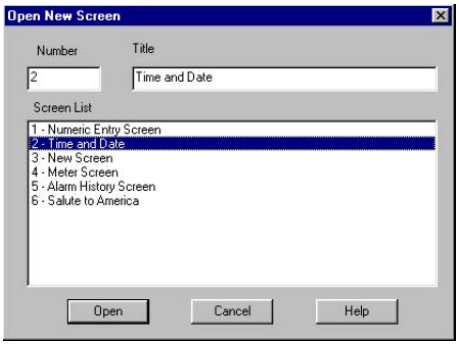


Your project information has been entered and you are now ready to begin designing your screens. Remember that you can go back to step one and change project information, if necessary. Just click on the 1 button on the 3 Easy Steps Tool Bar, shown to the left.

For more information on the Main Programming Screen, see page 144.

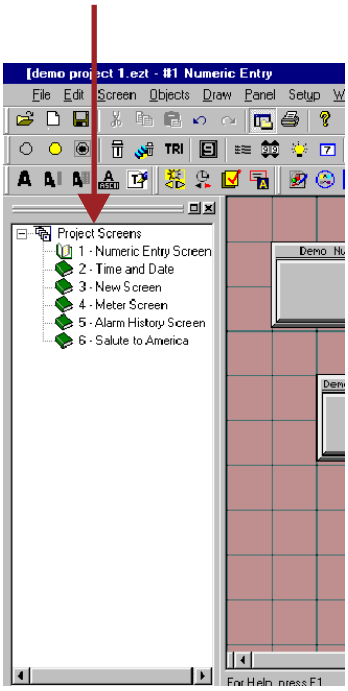


1. Click on the 2 button, **Design Your Screens**, and the following screen will appear.



2. Double click on one of the screens in the **Screen List** to open it, or enter a new screen number and name and click on the **Open** button.

Screens — Explorer View



3. You may also use the Screen Explorer view to navigate between screens. Double click on an existing screen listed in the Explorer window that you want to edit. The Main Programming Screen will open to the selected screen. You can easily switch between screens you are working on, to copy, paste, make changes, etc.

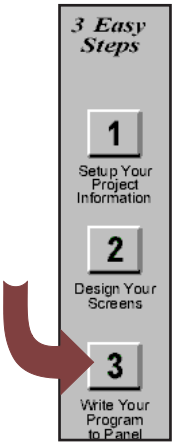
4. Right click the mouse at any time while designing your screens to access the menu shown to the right

Some of the screen design features available to you are:

- Program labels in up to 9 languages
- Popup Keypad that allows you to enter data
- Vector-based graphics for easy sizing, displayed in up to 128 colors
- Graphical trending
- PID loop tune face plates
- Recipe download
- Thumbwheel interface
- Radio buttons
- Analog clocks
- Meters, switches and lamps
- Symbol Factory® library of over 4,000 factory objects

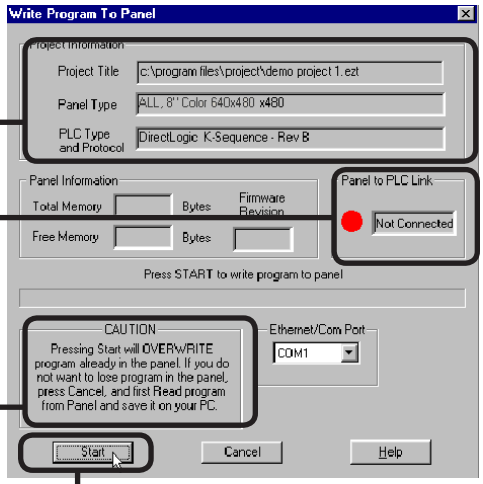
5. You are now ready to begin configuring objects.

Step 3 Write Your Program to Panel



Click on the button for **Step 3, Write Your Program to Panel**. Check to ensure that **"Ethernet/COM Port"** matches the port that is connected to your panel and click on the **Start** button. Read the information below to learn more about the "**Write Program to Panel**" screen.

Before Panel Write....



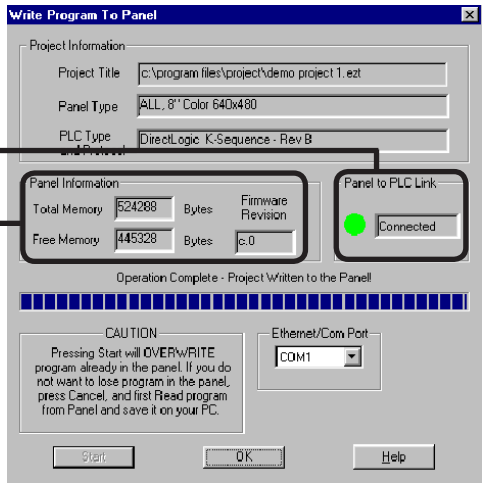
Project Information: Provides information about the current project you are about to transfer to the panel.

Panel to PLC Link will display "Not Connected" until download is completed.

DON'T LOSE AN EXISTING PROGRAM! If you're not sure of the changes you have made, save the existing program to a different project name from the one you are about to transfer to the panel before you click on the Start button.

Press the Start Button, the program will be transferred to the panel.

Panel Write Completed....



If the panel is connected to a PLC, the Panel to PLC Link will display a green dot next to the "Connected" message to indicate that a link is established.

Panel Information will display the Total and Free Memory in Bytes. (Most models allow you to increase memory by adding another RAM card.) It will also display the Firmware Revision number — the revision of the EZ Series Touch Panel internal firmware.

EZ Series Touch Panel is shipped with a bitmap program installed. The image shown above will display on the EZ Series Touch Panel screen upon initial power-up. The first project you transfer to the panel will replace this bitmap program!

4

Objects

In this chapter you will be shown how to create....

— Buttons
— Indicator Buttons
— Radio Buttons
— Switches
— Step Switch
— Tri-state Switch
— Numeric Entry
— Recipe
— Thumbwheel
— Indicator Lights
— Numeric Display
— Text Objects
— Clock Object
— Meter
— Bar Graphs
— Line Graph
— PID Face Plate
— Change Screen
— Alarm History
— System Objects
— Multi-state Indicator
— Bitmap Objects
— Increment/Decrement Value
— Report
— View File
— Unicode Objects

Objects Menu

In PLC-based control, the PLC performs the following control sequence continuously: reads inputs, solves control logic (ladder logic), writes values, and sets/resets outputs. The state of inputs and outputs is kept as bits in a data table. The data table is typically organized in words, with each word having 16 bits. Data values, such as parts count, are also kept as words in the data table.

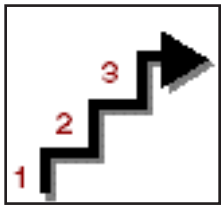
EZ Series Touch Panel provides direct access to the bits and words of the PLC data table, without going through I/O modules. The panel provides this access through its tags. EZ Series Touch Panel has tags that are mapped to the PLC data table. The mapping between panel tags and PLC data tables is user-defined through a simple dialog box. EZ Series Touch Panel objects allow you to set/reset bits and to read/write from the PLC data table through the panel tags.

For example, when a panel button object is pressed, it sets a panel tag. The panel transfers the state of this tag to the mapped bit in the PLC data table. Similarly, the PLC may set an output bit that turns on a pilot light on the panel.

Please Note: Panel Tags may be internal (not mapped to the PLC) or external (mapped to the PLC).

Panel Tags may be:

- Discrete
- 16-bit (Signed/Unsigned)
- 32-bit (Signed/Unsigned)
- 16-bit BCD
- 32-bit BCD
- 32-bit Floating Point
- ASCII String



IMPORTANT! To learn all the steps to configuring an object, read the instructions for the first object, Button Object, in its entirety. It will take you through each step in detail, explaining all the variables and choices. Because the objects share many common features, they are not repeated for each object. Any features that are unique to a particular object are explained in its own section. We recommend that you try out the tutorial, beginning on page 14, to learn the steps involved in creating an EZ Series Touch Panel project.

BASIC OBJECTS TOOL BAR

TEXT OBJECTS TOOL BAR

SYSTEM OBJECTS TOOL BAR

BITMAP OBJECTS TOOL BAR

Configure an object by selecting it from the OBJECT MENU or one of the OBJECT TOOL BARS

The **Objects** menu allows you to choose from several predefined objects. Objects provide generic panel functions. The objects can be accessed from the **Object Tool Bars — Basic Objects, Text Objects, System Objects, and Bitmap Objects —** shown above and to the left, and the Objects Menu shown on the preceding page.

All of the objects in this menu have user-defined frame types, line and fill colors, and text. To configure an object, click on the object icon on the object tool bars or on the object name in the menu drop down list with your mouse.

Basic Objects Tool Bar Icon

- Buttons
- Indicator Buttons
- Radio Buttons
- Switches
- Step Switch
- Tri-State Switch
- Numeric Entry
- Recipe
- Thumbwheel
- Indicator Lights
- Numeric Display
- Analog Clock
- Digital Clock
- Meter
- Bar Graph
- Line Graph
- PID Face Place
- Change Screen
- Alarm History
- Multi-state Indicator
- Increment/Decrement Value
- Report
- View File

Text Objects Tool Bar Icon

- Static Text
- Triggered Text
- Lookup Text
- Dynamic Text
- Text Entry

System Objects Tool Bar Icon

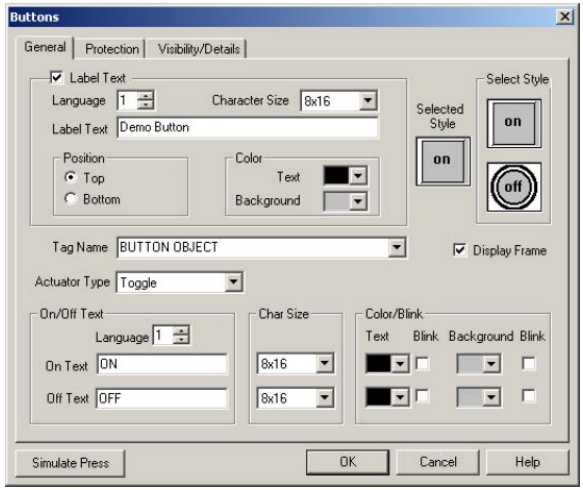
- Adjust Contrast
- Increment/Decrement Hour
- Activate Screen Saver
- Select Language

Bitmap Objects Tool Bar Icon

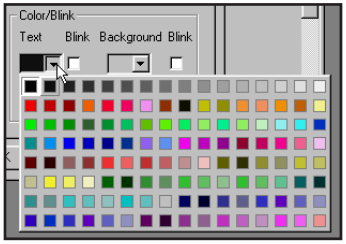
- Dynamic Bitmap
- Bitmap Button
- Multi-state Bitmap

Button Object

Pressing a **Button** object allows you to WRITE to a Tag. It can be displayed in a variety of colors, sizes and shapes and has a simulation option (allowing you to see how it will look when pressed). You may select from 5 types of button states: Momentary ON, Momentary OFF, Set ON, Set OFF and TOGGLE.



Choose from 128 Colors!



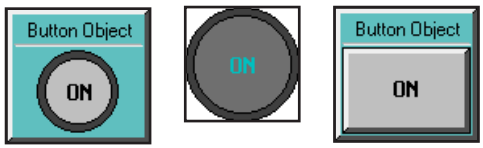
Click on the down arrow next to the default color block for text or background to view the color palette. Move the cursor over your choice and simply click to select.

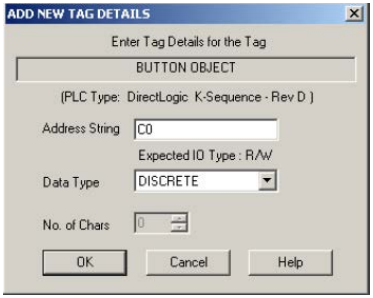
To put a Label on a Button, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the button to be visible, click on the box to deselect (the box will be empty).

To Choose a Button Style, perform the following steps:

1. Under **Select Style**, click on the style you prefer for the button object you are creating.
2. Your choice will appear under **Selected Style**.





For more information about Tags, see Tag Database, page 176.

NOTE: If your panel is connected to multiple PLCs, use the Station Number to address a specific PLC. For example: 2–V2002 would address the PLC Station Number 2.

NOTE: If you select Momentary ON or Momentary OFF, the PLC must set bit to proper state on powerup. This must be done when programming PLC Logic.

Hello...

Hola...

Guten Tag...

For each object, you may program the text to display in up to 9 Languages! (See Language section on page 198.)

Enter a Tag Name:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the button to correspond to.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will map the tag. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The Edit Tag Details screen will appear.

Select from the following Actuator Types:

Actuator Type determines how the tag will be controlled. ***NOTE: If you have assigned Password Protection for this object and select Momentary On or Momentary Off, the protection feature is disabled with this actuator type.***

- **Momentary On** will turn the tag on for as long as you touch the button. (Password Protection is disabled.)
- **Momentary Off** will turn the tag off for as long as you touch the button. (Password Protection is disabled.)
- **Set On** will latch the tag ON.
- **Set Off** will latch the tag OFF.
- **Toggle** will change the state of the tag every time the button is pressed.

Enter On/Off Text:

Here you will enter the Text that will appear within the object, and control how that text will appear.

1. Select the **Language** number (1–9) for the **On/Off Text**.
2. Type in what you want to appear within the button for the **On Text** and for the **Off Text** (i.e., you might want to place the words STOP and RUN inside the buttons, instead of Off and On).
3. Select **Character Size** from the available choices
4. Select the **Color** of the **Text** and the **Color** of the **Background**.
5. If you want the **Text** or the **Background** to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.

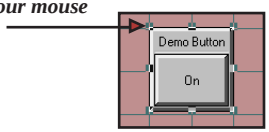
OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Button on the screen and size it.

- To size the button, grab a handle and drag it to the size you want.

Grab a handle with your mouse

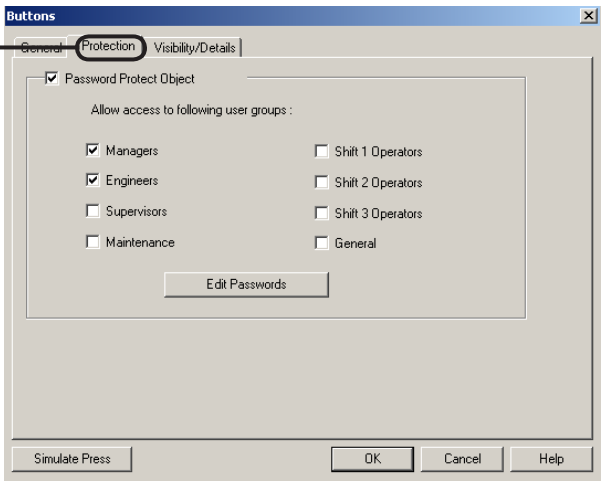


- To move the button, select it, click and hold left mouse button and drag it to the area of the screen where you want it to appear.

Simulate Press
To Simulate Press, double click the object to bring up the object dialog box. (You may have to drag the dialog box to see the object on the programming screen.) Click on the Simulate Press button to see how the button object will display on the screen when pressed.

Click on the Protection Tab

Protection Tab



The following touch objects allow you to enable protection and assign passwords to allow a group or individual (user-defined) to have access to that object:

- *Buttons*
- *Indicator Buttons*
- *Switches*
- *Step Switches*
- *Tri-State Switches*
- *Numeric Entry*
- *Recipe*
- *Thumbwheel*
- *Text Entry*
- *Change Screen*
- *Alarm History*
- *Increment/Decrement Hour*
- *Activate Screen Saver*
- *Adjust Contrast*
- *Select Language*
- *Bitmap Button*
- *Increment/Decrement Value*

The **Password Protect Object** feature allows you to prevent unauthorized users from accessing certain objects and their functions. This feature is useful when several people will be using EZ Series Touch Panel to perform different tasks, such as, changing initial values, or monitoring system status. To enable password protection for the object, click in the box in front of the groups you wish to allow access.

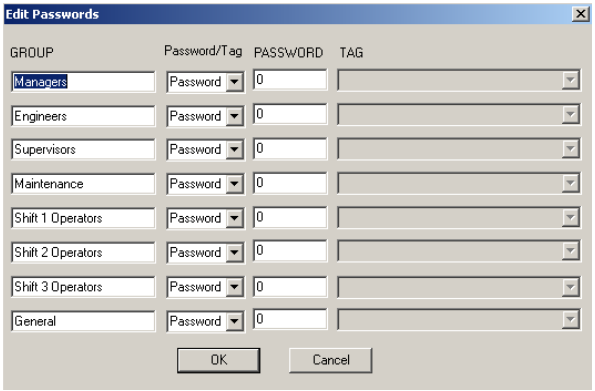
Edit Passwords
There are eight groups that you may assign Passwords to. Passwords allow you to implement restrictions on who can use the password protected objects (e.g., to make system or internal panel adjustments, enter text or values, or control a machine function in your application). Click on the **Edit Passwords** button to setup or change the passwords.

IMPORTANT!
Password Protection is not intended to work with objects when the actuator type selected is Momentary On and Momentary Off.

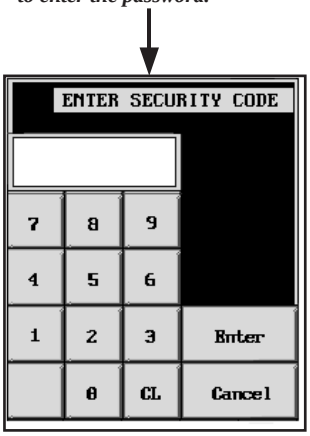
GROUP
(You may change the Group names to suit your application.)

Managers
Engineers
Supervisors
Maintenance
Shift 1 Operator
Shift 2 Operator
Shift 3 Operator
General

NOTE: If you enter a password with leading zeroes, e.g., 00003 or 00533, the leading zeroes will be ignored!



A keypad similar to the one shown below will appear on the panel when a protected objected is pressed, prompting the operator to enter the password.



Password/Tag
Select whether or not you want your password to be stored in the panel or in the PLC. If you choose Password, it will be stored in the panel. If you choose Tag, it will be stored in the PLC.

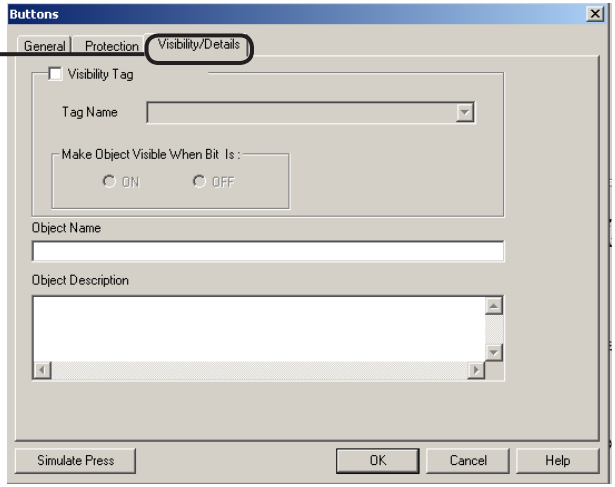
PASSWORD
A 1–10 digit number (numeric only) is assigned here. The user must then enter this number to perform protected functions for a particular Group. You will not be allowed to enter a password if you select Tag in the second column.

Do not enter leading zeroes in a password. Leading zeroes are ignored. In other words, if you enter a password of 00456, your password will be 456.

TAG
Tag names are assigned to PLC addresses that hold the passwords. This allows you to store the codes in your PLC. You will not be allowed to enter a **Tag** if you select **Password** in the second column.

Visibility/Details Tab

Click on the Visibility/ Details Tab



Visibility

1. Check the box in front of **Visibility Tag** if you want to control when the object is visible on the screen. (If it is not checked the object will always be visible.)
2. Click on the down arrow next to the **Tag Name** box to view a list of the tags you have previously programmed or create a new one. Select the tag that links the object to the register bit that you want to control it.
3. Select whether you want the **Object Visible** when the bit is ON or OFF.

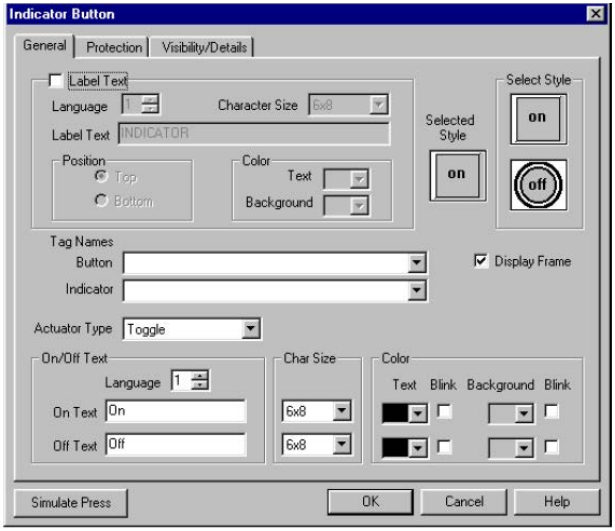
Details

1. Type in a name for the object in the space provided under **Object Name**. The name can be up to 40 characters long.
2. Type in a description of the object in the space provided under **Object Description**. An Object Description can be up to 400 characters long.

Indicator Button Object

An **Indicator Button** combines a regular button with an indicator light. It allows you to perform a WRITE operation to one bit and a READ operation from a second discrete location. The state of that READ location determines whether the button is displayed in the ON or OFF mode. You may choose to make the READ and WRITE location the same.

To put a Label on an Indicator Button, perform the following steps:



1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the button to be visible, click on the box to deselect (the box will be empty).

To Choose an Indicator Button Style, perform the following steps:

1. Under **Select Style**, click on the style you prefer for the button object you are creating.
2. Your choice will appear under **Selected Style**.

Enter a Tag Name:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the Indicator button and the Indicator to correspond to.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The Edit Tag Details screen will appear.

appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

Select from the following Actuator Types: Actuator Type determines how the tag will be controlled.

- **Momentary On** will turn the tag on for as long as you touch the button. (Password Protection is disabled.)
- **Momentary Off** will turn the tag off for as long as you touch the button. (Password Protection is disabled.)
- **Set On** will latch the tag ON.
- **Set Off** will latch the tag OFF.
- **Toggle** will change the state of the tag every time the button is pressed.

NOTE: If you have assigned Password Protection for this object and select Momentary On or Momentary Off, the protection feature will not be enabled.

Also, if you select Momentary ON or Momentary OFF, the PLC must set bit to proper state on powerup. This must be done when programming PLC Logic.

Enter On/Off Text: Here you will enter the Text that will appear within the object, and control how that text will appear.

1. Select the **Language** number (1–9) for the On/Off Text.
2. Type in what you want to appear within the button for the On Text and for the Off Text (i.e., you might want to place the words **STOP** and **RUN** inside the buttons, instead of Off and On).
3. Select **Character Size** from the available choices
4. Select the **Color** of the **Text** and the **Color** of the **Background**.
5. If you want the **Text** or the **Background** to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.

Protection ***(See Button Object.)***

Visibility/Details ***(See Button Object.)***

OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

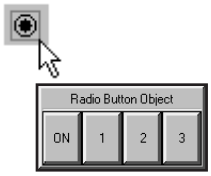
Place Indicator Button on the screen and size it.

- To size the Indicator button, select it, grab a handle and drag.
- To move the button, select it, click and hold left mouse button and drag it to where you want it to appear on the screen.

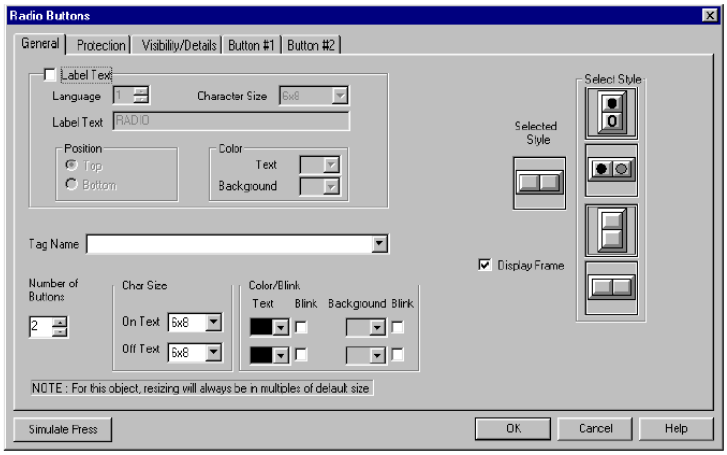
Simulate Press

To Simulate Press, double click the object to bring up the object dialog box. (You may have to drag the dialog box to one side to see the object on the programming screen.) Click on the **Simulate Press** button to see how the button object will display on the screen when pressed.

Radio Buttons Object



The **Radio Button** object has a maximum of 8 buttons, however, only one can be on at any given time. When a button is pressed it releases any button that may be ON, and becomes the active button. Each button controls a bit and is assigned an area of the touchscreen. Radio buttons can have from 2 to 8 buttons. Please note that no more than 6 vertical buttons can be used for the regular 6-inch panels, slim bezels with 192 (16 x 12) touch cells can have up to 8 buttons.



To put a Label on a Radio Button, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the button to be visible, click on the box to deselect (the box will be empty).

To Choose a Radio Button Style, perform the following steps:

1. Under **Select Style**, click on the style you prefer for the button object you are creating.
2. Your choice will appear under **Selected Style**.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Enter a Tag Name:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want to button to correspond to.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

NOTE: This object can use a signed or unsigned Data Type. Button 1 = Bit 0 in assigned tag. Button 8 = Bit 7 in assigned tag. Bits 9 to 15 are not used.

Select Number of Buttons:

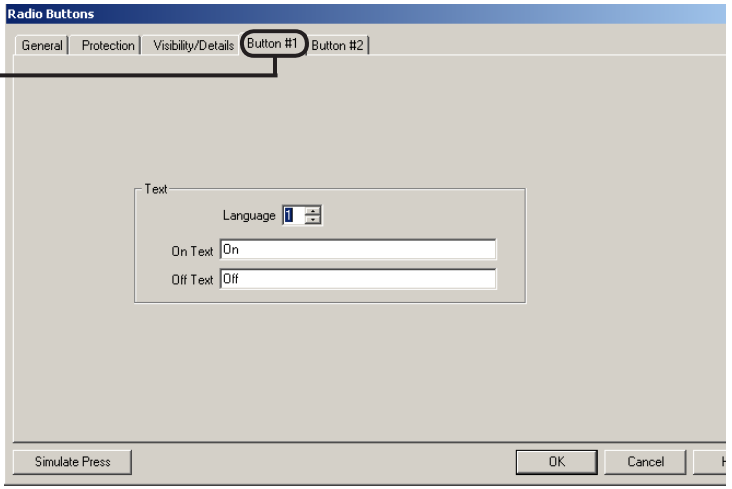
1. Click on the UP or DOWN arrow to select the number of radio buttons. You may choose from 2 to 8 buttons. (You may only have 6 buttons for 6-inch panels with 48 touch cells.)

Enter On/Off Text:

Text size and color are programmed under the General Tab. These characteristics will be implemented for all of the inside button text.

1. Select the **Character Size** for the On Text and the Off Text.
2. Choose the **Color** of the **Text** by clicking on the arrow button to view the color palette. Move the cursor over the color you want and click to select.
3. Select whether or not the Text will **Blink**.
4. Next, select the **Background Color** of the button and whether or not it will **Blink**.
5. Each Radio Button (from 2 to 8) may contain different text and a different language. Click on the **Button #1** tab.

Click on the Button #1 Tab to edit Language and On/Off Text.



6. Choose the **Language** number (1–9) and type in the text as you want it to appear within that button when ON and when OFF (i.e., you might want to place the words **STOP** and **RUN** inside the buttons, instead of Off and On).

Remember that the other universal characteristics for the button text and background have been chosen under the General Tab (character size, color, etc.).

Protection ***(See Button Object.)***

Visibility/Details ***(See Button Object.)***

OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Radio Button on the screen and size it.

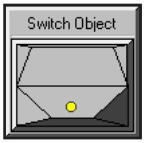
- To size the button, select it, grab a handle and drag.
- To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

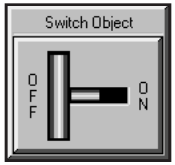
Simulate Press

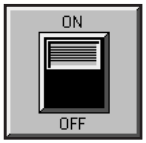
To Simulate Press, double click the object to bring up the object dialog box. (You may have to drag the dialog box to see the object on the programming screen.) Select the tab of the button you want to simulate. Click on the Simulate Press button to see how the button object will display on the screen when pressed.

There are several types of **Switch** objects that you may place on the EZ Series Touch Panel screen. They simulate mechanical switches of the same type, e.g.; Throw Switch, Selector Switch, Slide Switch, Toggle Switch, etc.

Switch Object

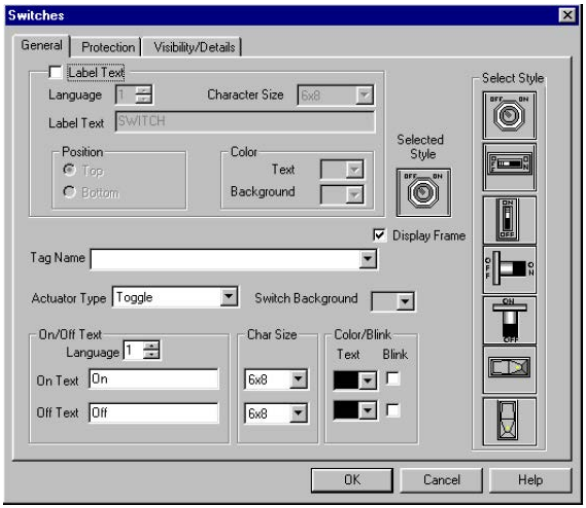






To put a Label on a Switch, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)



3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the switch to be visible, click on the box to deselect (the box will be empty).

To Choose a Switch Style, perform the following steps:

1. Under **Select Style**, click on the style you prefer for the switch object you are creating.
2. Your choice will appear under **Selected Style**.

Enter a Tag Name:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the switch to correspond to.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC .Click on the **OK** button.

Select the **Switch Background** color by clicking on the DOWN arrow and selecting a color from the palette.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

NOTE: If you select Momentary ON or Momentary OFF, the PLC must set bit to proper state on powerup. This must be done when programming PLC Logic.

Select from the following Actuator Types:
Actuator Type determines how the tag will be controlled. ***If you have assigned Password Protection for this object and select Momentary On or Momentary Off, the protection feature will not be enabled with this actuator type.***

- **Momentary On** will turn the tag on for as long as you touch the switch. (Password Protection is disabled.)
- **Momentary Off** will turn the tag off for as long as you touch the switch. (Password Protection is disabled.)
- **Set On** will latch the tag ON.
- **Set Off** will latch the tag OFF.
- **Toggle** will change the state of the tag every time the switch is pressed.

Enter On/Off Text:
Here you will enter the Text that will appear within the object, and control how that text will appear.

1. Select the **Language** number (1–9) for the On/Off Text.
2. Type in what you want to appear within the switch for the On Text and for the Off Text (i.e., you might want to place the words **STOP** and **RUN** inside the switches, instead of Off and On).
3. Select **Character Size** from the available choices
4. Select the **Color** of the **On Text** and the **Color** of the **Off Text**.
5. If you want the **Text** to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.

Protection ***(See Button Object.)***

Visibility/Details ***(See Button Object.)***

OK/Cancel/Help Buttons

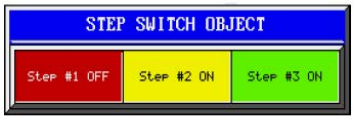
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

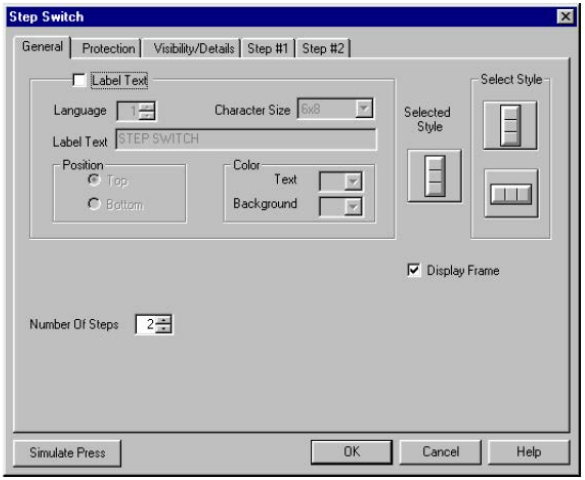
Place Switch on the screen and size it.

- To size a switch, click on it to select, grab a handle with the mouse and drag to the size you want.
- To move the switch, select it, click and hold left mouse button, and drag to where you want it to appear on the screen.

Step Switch Object

The **Step Switch** object simulates a Mechanical Step Switch on the panel. It allows you to simultaneously monitor and control two, three, or four different bits and display ON and OFF text for each bit. Each time the Step Switch is pressed, each bit will be cycled one at a time from OFF to ON with only one bit ON at a time.





To put a Label on a Switch, perform the following steps:

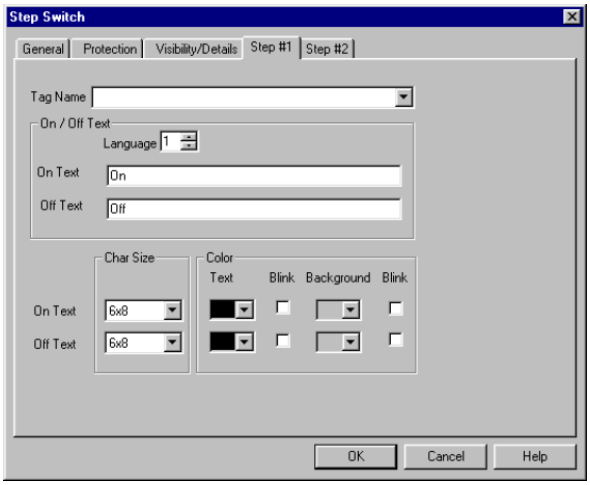
1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the switch to be visible, click on the box to deselect (the box will be empty).

To Choose a Step Switch Style, perform the following steps:

1. Under **Select Style**, click on the style you prefer for the button object you are creating.
2. Your choice will appear under **Selected Style**.

Choose the **Number of Steps** (from 1 to 4) in the process or application that you want your switch to control. Enter the number of steps or click on the up/down arrows to select.

Step #1 Tab



NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

1. Click on **Step #1** tab.
2. Enter **Tag Name** for Step #1.
3. Select **Language** (1 to 9) for **On/Off Text** and then enter the **On Text** and **Off Text** that you want to appear within Step Switch #1.
4. Select **Character Size**, **Color** of **Text** and **Background** and whether or not, Text and/or Background will **Blink**.
5. Repeat for **Step #2**, **Step #3** and **Step #4**, if necessary.

Protection ***(See Button Object.)***

Visibility/Details ***(See Button Object.)***

OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Step Switch on the screen and size it.

- To size the switch, grab a handle and drag.
- To move the switch, select it, click and hold left mouse button and drag.

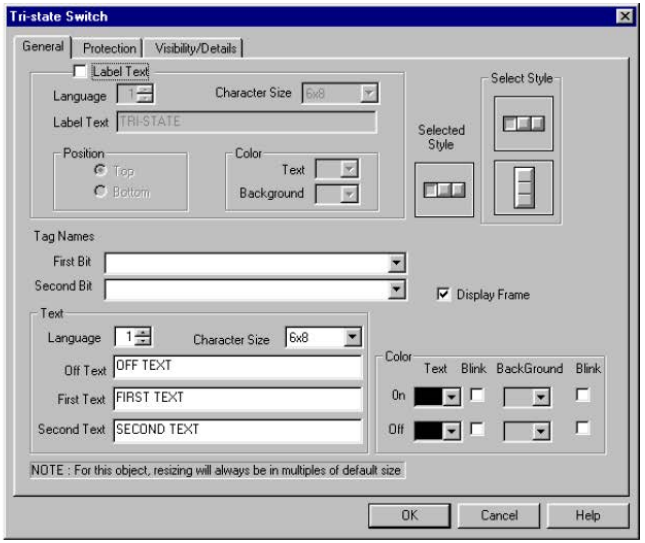
Simulate Press

To Simulate Press, double click the object to bring up the object dialog box. (You may have to drag the dialog box to see the object on the programming screen.) Select the tab of the Step you want to simulate (if on General tab, will simulate Step 1 only). Click on the Simulate Press button to see how the switch object will display on the screen when pressed.

Tri-State Switch Object

The **Tri-State Switch** object controls two bits at a time from two different tags. It consists of three buttons. If the first button is pressed, both the bits are OFF. If the second button is pressed, the first bit is ON and second bit is OFF. If third button is pressed, the first bit is OFF and second bit is ON.

To put a Label on a Switch, perform the following steps:



1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the switch to be visible, click on the box to deselect (the box will be empty).

NOTE: The Tri-State switch object is always snapped to a touch cell to ensure that it operates properly on the panel screen. If you select the vertical style, you will notice that a label is not available (grayed out).

To Choose a Tri-State Switch Style, perform the following steps:

1. Under **Select Style**, click on the style you prefer for the button object you are creating.
2. Your choice will appear under **Selected Style**.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Tag Names

Click on the down arrow to select or enter new **Tag Names** for the **First Bit** and for the **Second Bit**. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

Text
Here you will enter the **Text** that will appear within the object, and control how that text will appear.

1. Select the **Language** number for the **Off**, **First** (bit) and **Second** (bit) Text.
2. Type in what you want to appear within the button for the Off Text, First Text and for the Second Text.
3. Select **Character Size** from the available choices.
4. Select the **Color** of the **Text** and the **Color** of the **Background**. If you want the Text or the Background to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.

Protection ***(see Button Object.)***

Visibility/Details ***(see Button Object.)***

OK/Cancel/Help Buttons

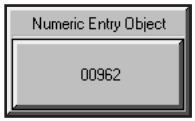
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

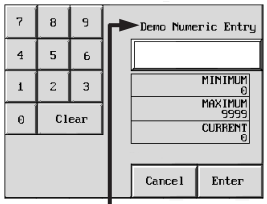
Place Tri-State Switch on the screen and size it.

- To size the switch, grab a handle and drag it to size you want.
- To move the switch, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

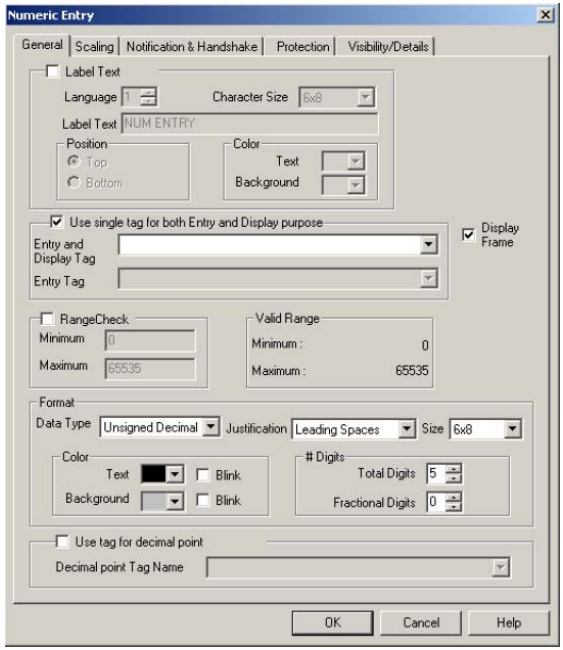
Numeric Entry Object

The **Numeric Entry** object allows you to write a value to a PLC register. A numeric keypad will pop up when the Numeric Entry object is pressed on the EZ Series Touch Panel screen. When you select a **Tag Name**, you will be selecting the PLC location where you want the keypad accumulator data to go. In other words, the value the operator enters on the keypad will be written to the PLC location.





***Please Note:** Numeric label is truncated to 20 characters on the popup keypad.*



To put a Label on the Numeric Entry object, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the object to be visible, click on the box to deselect (the box will be empty).

Choose Tag(s):

1. Choose whether or not you want to use a single tag for both **Entry and Display** purposes, or two tags — a **Display Tag** and an **Entry Tag**. *Two tags will be necessary if you are using Expressions in the tag. (See Note in margin on next page.)*

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

NOTE: When a single tag is used, the I/O type the tag can accept is Read/Write. When two tags are used, the first tag's I/O type also accepts Read Only and, therefore, can define source expressions.

2. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the object to correspond to.
3. If the **Tag Name** is new, the **Tag Entry** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.

To Enter Range Check , perform the following steps:

1. Under **Range Check**, set the minimum and maximum set points. Click on **Minimum**, the low end point, and enter a value. The operator will not be allowed to enter a value lower than the value in this field.
2. Click on **Maximum**, the high end point, and enter a value. The operator will not be allowed to enter a value higher than the value in this field. (Valid Range is shown in the next window.)
3. The **Valid Range** is shown. Your minimum and maximum set points must be within these limits.

To Select the Format of the Numeric Entry Keypad, perform the following steps:

The **Data Type** is dependent upon the Tag data type. In turn, the Tag data type is dependent upon the type of PLC you are using. Therefore, your selections next to Data Type in this object will be limited by your Tag and PLC data type. EZ Series Touch Panel Editor Programming Software will automatically limit your selections based on the PLC and Tag address format. The program will also let you know if you have entered an invalid data type.

SIGNED DATA TAG:	SIGNED Keypad only
UNSIGNED DATA TAG:	UNSIGNED, OCTAL, HEX Keypad
BCD DATA TAG:	BCD Keypad only FLOATING POINT TAG
(if available for that PLC):	FLOATING POINT Keypad only

The **Data Types**, and their respective ranges, that may be available, are as follows:

Signed 16 Decimal:	-32768 to +32767
Signed 32 Decimal:	-2147483648 to +2147483647
Unsigned 16 Decimal:	0 to 65535
Unsigned 32 Decimal:	0 to 4294967295
Octal 16:	0 to 177777
Octal 32:	0 to 37777777777
Hex 16:	0 to FFFF
Hex 32:	0 to FFFFFFFF
BCD 16:	0 to 9999
BCD 32:	0 to 99999999

1. Click on **Data Type** and select from the available choices.
2. Click on **Justification** and select from the following: **Leading Zeroes**, **Leading Spaces**, or **Trailing Spaces**.
3. Click on **Size** and select from the available character sizes. (Click on down arrow to view list of sizes.)
4. Under **Color**, click on down arrow to view the color palette for **Text**. Click on any color to select.
5. Click on the box in front of **Blink** if you want your text characters to blink.
6. Select color for **Background** and whether or not you want it to **Blink**.
7. Click on **Total Digits** under **# Digits**. The panel will display the minimum value and the maximum number inside the keypad. Here you will select how many digits, from 1 to 10 (depending on the data type and tag value type chosen), that you want to display.
8. If you want **Fractional Digits**, enter 1 through 10 here (select 0 for none). For example, if your maximum value is 999, you would enter 3 under total digits. If your maximum value is 99.9, enter 3 under **Total Digits** and 1 under **Fractional Digits**.
9. If you want a tag to control the decimal points, click in the box in front of **Use tag for decimal point** and then enter or select a **Decimal point Tag Name**.

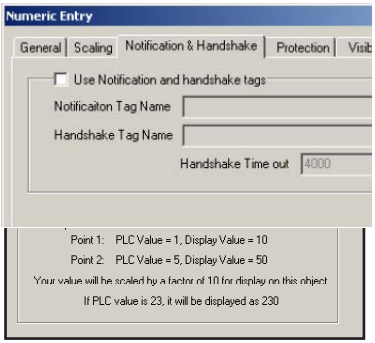
NOTE: If a Decimal Point tag is selected, the Fractional Digits will not be used. The number of fractional digits will come from the value of the tag.

NOTE: Click on the Scaling tab if you want the Display Value to be different than the PLC Value.

Scaling Tab

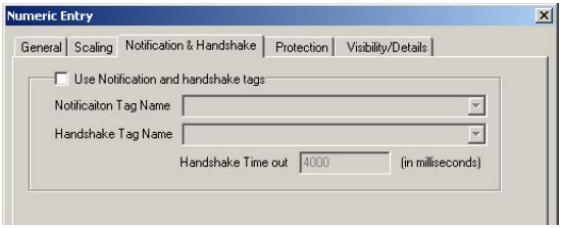
Under the **Numeric Entry** object **Scaling** tab, you can scale the entered value from the numeric entry object to another value in the PLC. Enter the **Point 1** and **Point 2 PLC Values** and **Point 1** and **Point 2 Display Values.**

(An example of SCALING is provided on the dialog box)



Notification and Handshake Tab:
Click on this tab if you want to configure a discrete tag that will notify the panel when the numeric entry has been received. To let the operator know, the keypad will automatically close when the value has been received.

1. Click in the box in front of **Use Notification and Handshake tags** to enable this option.



2. In the **Notification Tag Name** field, enter or select a tag name where the tag will notify a location that a numeric entry value has been received.
3. In the **Handshake Tag Name** field, enter or select a tag name where the tag will return a value to the panel that will close the keypad thereby letting the operator know that the value was received and entered.
4. Enter a **Handshake Time out** time in milliseconds. Enter a number between 1 and 65535.

Protection ***(see Button Object.)***

Visibility/Details ***(see Button Object.)***

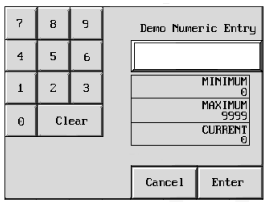
OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Object on the screen and size it.

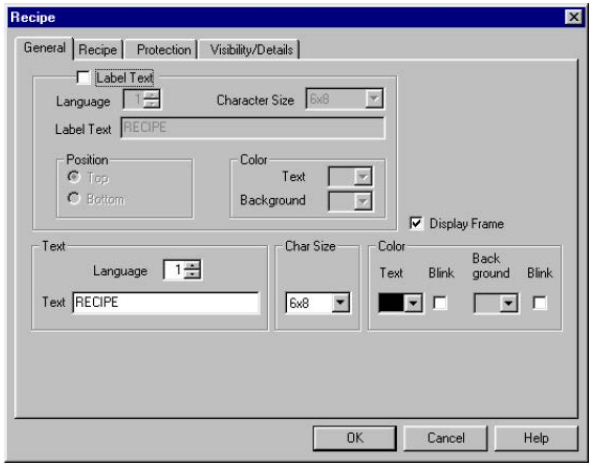
- To size the Numeric Entry object, grab a handle and drag.
- To move the object, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

This is an example of a SIGNED DECIMAL Popup Keypad as it will display on your panel Screen. If you enter an invalid value, press the Clear (CLR) button and reenter.



Recipe Object

The **Recipe** object allows you to write preset values of up to 20 Tags to the PLC to change the process. Thus, this feature can be used to download "recipes" to the PLC.



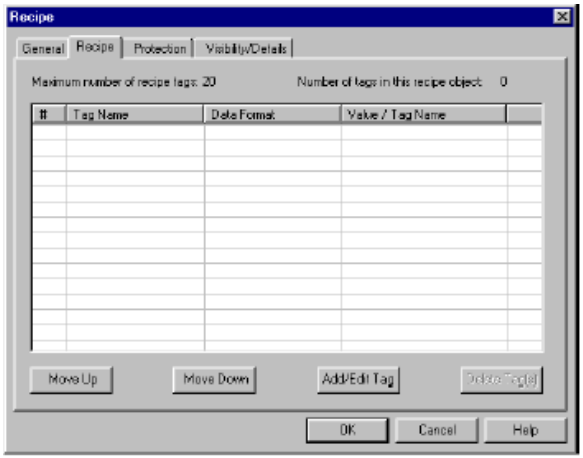
To put a Label on the Recipe object button, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the object to be visible, click on the box to deselect (the box will be empty).

Enter Text:
Here you will enter the Text that will appear within the object, and control how that text will appear.

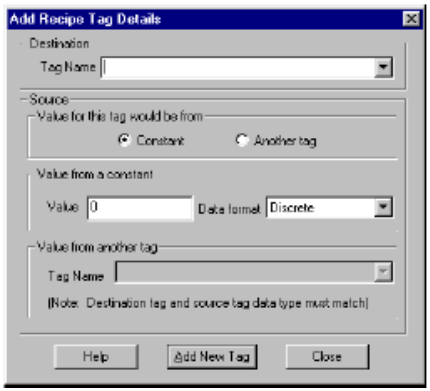
1. Select the **Language** number (1–9) for the Text.
2. Type in what you want to appear within the button.
3. Select **Character Size** from the available choices
4. Select the **Color** of the **Text** and the **Color** of the **Background**.
5. If you want the **Text** or the **Background** to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.

Enter Tag Name and Register Values:



Pressing the **Recipe** button allows you to write values to several locations at once. Click on the Recipe tab, to view the window above. This is where the recipe tag database is displayed. You will enter the values to be written to the PLC location as follows.

1. Click on the **Add/Edit Tags** button. The following window will appear.



2. Under **Destination, Tag Name**, click on the down arrow to view list of available tags (or enter a new name). Select the tag you wish to use. If you enter a new tag name the **Add New Tag Details** dialog will open. Enter the tag details.
3. The **Destination** tag type determines the data format.
4. Under **Source**, choose **Constant** (default) or **Another tag** for the value.
5. If you choose **Constant**, the **Value from a constant** group will be enabled and **Value from another tag** will be disabled.

6. Enter a **Value** that you want written to the register.
7. Select from the available **Data Format** choices (i.e., Unsigned Decimal, Signed Decimal, Octal or Hex.)
8. If you choose **Another tag**, the **Value from another tag** will be enabled and **Value from a constant** will be disabled.
9. Enter a new source tag or choose an existing tag from those available. Only the tags that are of the same data type as the destination tag will be displayed.
10. Repeat for the second entry. You may continue writing values for up to 20 Tags (locations).

Note: If a Discrete tag is chosen, enter a 0 for OFF or a 1 for ON.

Protection ***(see Button Object.)***

Visibility/Details ***(see Button Object.)***

OK/Cancel/Help Buttons

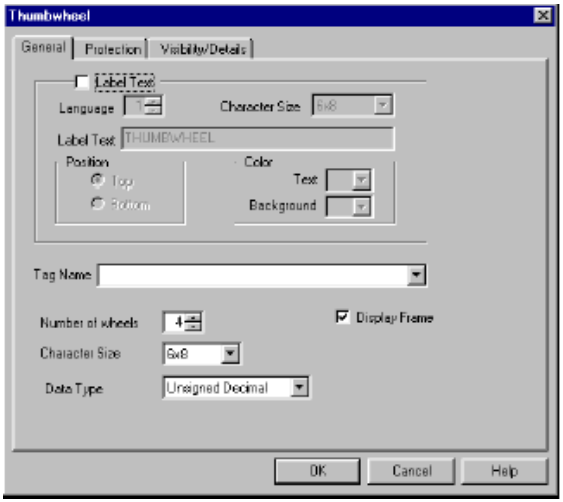
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Recipe object button on the screen and size it.

- To size the object, grab a handle and drag.
- To move the object, select it, click and hold left mouse button while dragging the object to where you want it placed on the screen.

Thumbwheel Object

The function of this object is similar to Numeric Entry Button. The **Thumbwheel** object allows you to display a Thumbwheel keypad on the panel. This button can be 1 to 5 digits. Using the popup thumbwheel, the operator can change each digit separately. The operator presses the UP or DOWN arrow to increment or decrement the value of each digit. Press the enter button to write that value to the defined tag. This allows the operator to assign a value to a specific PLC register.



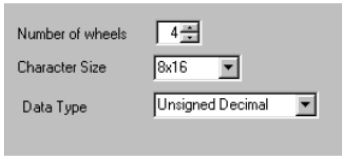
To put a Label on the Thumbwheel object button, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the object to be visible, click on the box to deselect (the box will be empty).

NOTE: ONLY TWO TAG TYPES are available for the Thumbwheel object—UNSIGNED_INT_16 (can be UNSIGNED Decimal or HEX Data type) and BCD_INT_16.

Enter a Tag Name:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the object to correspond to.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.



Select Thumbwheel Format:

1. Select the **Number of Wheels** (from 1 to 5) for the object. *You will only be able to use 4 digits (wheels) when using BCD or Hex data types.*
2. Choose the size of the numbers (**Character Size**) that will appear within the thumbwheels.
3. Select the **Data Type** of the numbers from the available selections.

Protection ***(see Button Object.)***

Visibility/Details ***(see Button Object.)***

OK/Cancel/Help Buttons

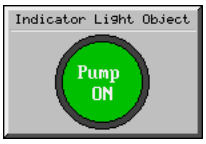
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

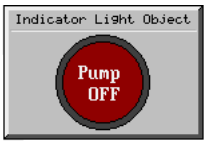
Place Thumbwheel object button on the screen and size it.

- To size object, grab a handle and drag the object to the size that you want.
- To move the object, select it, click and hold left mouse while dragging to where you want it to appear on the screen.

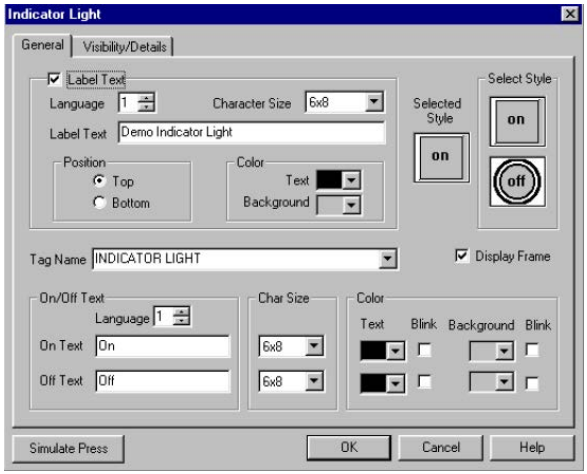
Indicator Light Object

An **Indicator Light** object allows you to monitor and display the state of a bit. The Indicator Light reads the bit information and produces the appropriate display. For example, the Indictor Light could display the status of a bit linked to a push button.





No Frame



To put a Label on the Indicator Light object, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the object to be visible, click on the box to deselect (the box will be empty).

To Choose an Indicator Light Style, perform the following steps:

1. Under **Select Style**, click on the style you prefer for the indicator light object you are creating.
2. Your choice will appear under **Selected Style**.

Enter a Tag Name:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the Indicator Light to monitor.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

Enter On/Off Text:
Here you will enter the Text that will appear within the object, and control how that text will appear.

1. Select the **Language** number (1–9) for the On/Off Text.
2. Type in what you want to appear within the Indicator Light object for the On Text and for the Off Text (i.e., you might want to place the words **STOPPED** and **RUNNING** inside the Indicator light, instead of Off and On).
3. Select **Character Size** from the available choices.
4. Select the **Color** of the **Text** and the **Color** of the **Background**.
5. If you want the **Text** or the **Background** to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.

Visibility/Details ***(See Button Object.)***

OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

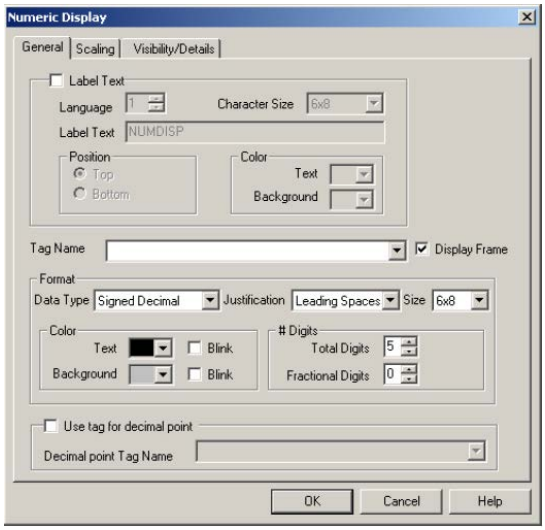
Place Indicator Light object on the screen and size it.

- To size it grab a handle and drag it to the size that you want.
- To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Simulate Press
To Simulate Press, double click the object to bring up the object dialog box. (You may have to drag the dialog box to see the object on the programming screen.) Click on the Simulate Press button to see how the Indicator Light object will display on the screen when pressed.

Numeric Display Object

The **Numeric Display** object allows you to display a Tag value within a frame on the screen.



To put a Label on the Numeric Display object, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the object to be visible, click on the box to deselect (the box will be empty).

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Enter a Tag Name:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the Numeric Display object to monitor.
2. If the Tag Name is new, the **Tag Entry** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.

Enter the Format of the Numeric Display:

The **Data Type** is dependent upon the Tag type. In turn, the Tag data type is dependent upon the type of PLC you are using. Therefore, your selections next to Data Type in this object will be limited by your Tag and PLC data type. EZ Series Touch Panel Editor Programming Software will automatically limit your selections based on the PLC and Tag address format.

The **Data Types**, and their respective ranges, that may be available, are as follows:

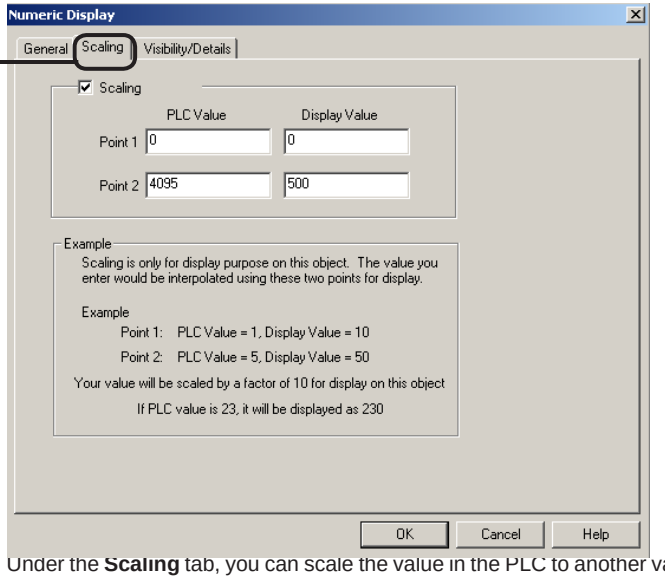
Signed 16 Decimal:	-32768 to +32767
Signed 32 Decimal:	-2147483648 to +2147483647
Unsigned 16 Decimal:	0 to 65535
Unsigned 32 Decimal:	0 to 4294967295
Octal 16:	0 to 177777
Octal 32:	0 to 37777777777
Hex 16:	0 to FFFF
Hex 32:	0 to FFFFFFFF
BCD 16:	0 to 9999
BCD 32:	0 to 99999999

1. Click on **Data Type** and select from the available choices.
2. Click on **Justification** and select from the following: Left Justify, Right Justify, or Leading Zeroes.
3. Click on **Size** and select from the available character sizes. (Click on down arrow to view list of sizes.)
4. Under **Color**, click on down arrow to view the color palette for **Text**. Click on any color to select.
5. Click on the box in front of **Blink** if you want your text characters to blink.
6. Select color for **Background** and whether or not you want it to **Blink**.
7. Click on **Total Digits** under **# Digits**. Here you will select how many digits, from 1 to 10 (depending on the Data Type and Tag Type), that you want to display.
8. If you want **Fractional Digits**, enter 1 through 10 here (select 0 for none). For example, if your maximum value is 999, you would enter 3 under total digits. If your maximum value is 99.9, enter 3 under Total Digits and 1 under Fractional Digits.
9. If you want a tag to control the decimal points, click in the box in front of **Use tag for decimal point** and then enter or select a **Decimal point Tag Name**.

NOTE: If a Decimal Point tag is selected, the Fractional Digits will not be used. The number of fractional digits will come from the value of the tag.

Scaling Tab

Click on the Scaling tab if you want the Display Value to be different than the PLC Value.



Under the **Scaling** tab, you can scale the value in the PLC to another value on the Numeric Display. Enter **Point 1** and **Point 2 PLC Values**. Scale these values by entering the **Point 1** and **Point 2 Display Values.**

For example, say the PLC values are an analog value of 0–4095, and represent a range of 0–500 PSI.

Enter a PLC Value (Point 1) = 0 and a Display Value (Point 1) = 0 (PSI)

Enter a PLC Value (Point 2) = 4095 and a Display Value (Point 2) = 500 (PSI)

If the PLC Value is then = 1024, the Display Value will be 125.

Visibility/Details ***(See Button Object.)***

OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Object on the screen and size it.

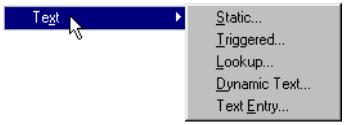
- To size the object, grab a handle and drag it to the size you want.
- To move the button, select it, click and hold left mouse button and drag to the area on the screen that you want it to appear.

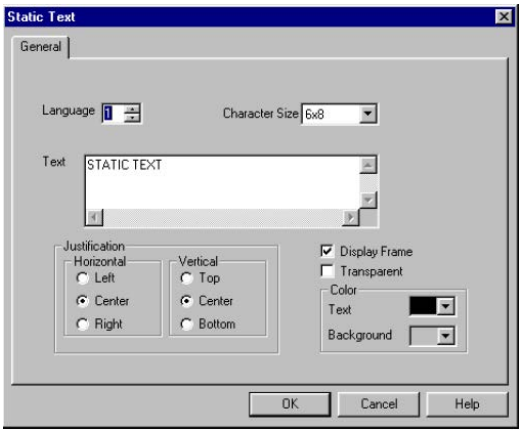
Text Objects

Static Text

This object allows you to place text anywhere on the screen to provide information, screen description, etc. You can choose whether or not to display a frame around the text and whether or not you want it to be transparent.

Under the General tab you will make the following selections:





1. Select a **Language** (1–9) that you want the text to display in.
2. Select a **Character Size** from those available (e.g., 6 x 8, 8 x 16, 8 x 32).
3. Type in the **Text** as you want it to display on the panel screen. The text can be up to 500 characters and wraps within the frame.
4. Select **Horizontal** (Left, Center, or Right) and **Vertical** (Top, Center, or Bottom) **Justification** for the text. Default for both is "Center".
5. If you want the text to appear within a frame, click on the box in front of **Display Frame** to enable. If you want to see through the text and/or frame to what lies underneath, click on the box in front of **Transparent**.
6. Select the Text and Background **Color** from the available choices. Default Text color is black and the default Background color is gray.

OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Text Object on the screen and size it.

- To size it grab a handle and drag.
- To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

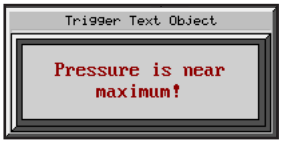
Grab a handle with your mouse

The Text Object Tool Bar as it originally appears in the programming window.

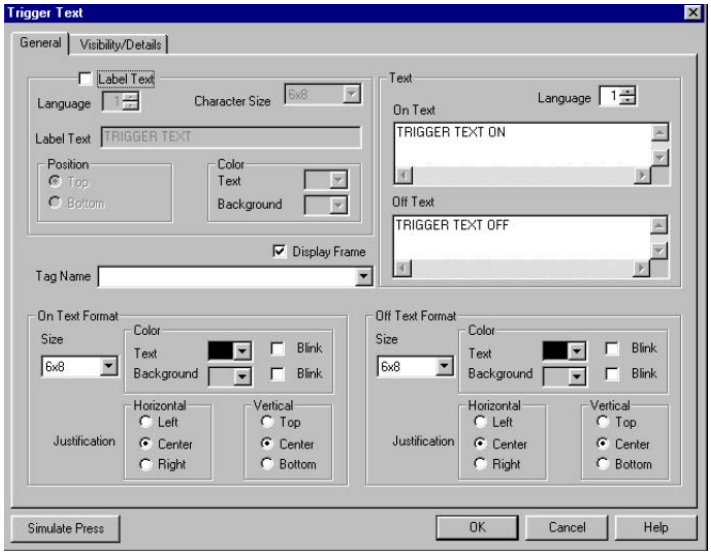
You can move the tool bar to other locations on the programming window by clicking and holding the left mouse button on the handle bar (see above), and dragging to where you want it to appear in the Programming Window.

The Text Tool bar as it appears on the programming screen.

Triggered Text



The **Triggered Text** object monitors a bit to display different text strings for "ON" and "OFF" conditions. This would be used in applications where you want to provide a message or a description of the process or condition.



To put a Label on the Triggered Text object, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the text to be visible, click on the box to deselect (the box will be empty).

Enter the Text you want to appear on the display when ON and when OFF:

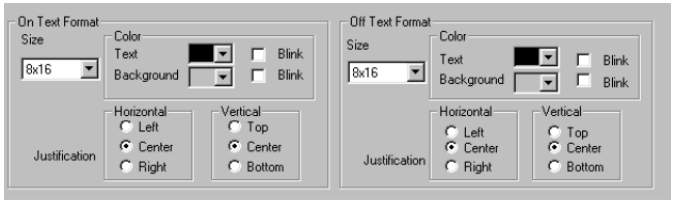
1. Select the **Language** number for the On Text and the Off Text.
2. Type in what you want to appear within the frame for the On Text and for the Off Text (up to 500 characters).

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Enter a Tag Name:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the Trigger Text object to monitor.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

Make selections for On Text and Off Text Format:



Under **On Text Format:**

1. Select **Size** from the available choices.
2. Select the **Color** of the **Text** and the **Color** of the **Background**.
3. If you want the Text or the Background to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.
4. Choose the Horizontal and Vertical **Justification** for the On Text. For **Horizontal** justification, click in front of one of the following: **Left**, **Center**, or **Right**. For **Vertical** Justification, click in front of **Top**, **Center**, or **Bottom**.

Under **Off Text Format**, repeat the steps above.

Visibility/Details ***(See Button Object.)***

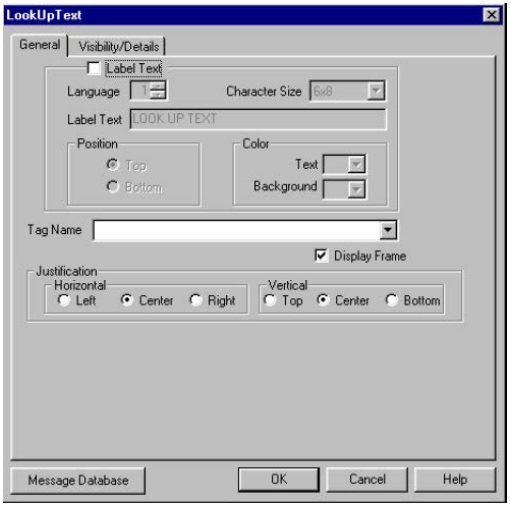
OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Lookup Text

Lookup Text is an object that is created to display pre-programmed messages within a frame on the panel screen. These pre-programmed messages are stored in the "Message Database." It displays one message at a time. (Click on the Message Database button at the bottom of the dialog box to program messages in the database.)

A Value corresponding to the Tag Name is the Message Number that will be displayed inside the frame of the Lookup Text. Each message designed in the Message Database is numbered from 1 to 999. So, if the Value corresponding to the Tag Name is 10, Message Number 10 will be displayed within the Lookup Text Frame.



To put a Label on the Lookup Text object, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the text to be visible, click on the box to deselect (the box will be empty).

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

NOTE: The value corresponding to the Tag Name tells which message number from the message database is to be displayed.

Enter a Tag Name:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name from the available choices.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.

Select Message Text Justification:

Messages created in the Lookup Text object are saved in the **Message Database**. (*See page 187 for **Message Database** setup.)* This is a local attribute for each Lookup Text object. So, the same message in one Lookup text object can be left justified within the frame while in another Lookup Text object, it can be right justified.

1. Select the **Horizontal** and **Vertical** Justification for the text as it will appear within the frame when displayed on the panel.

2. To create a message, click on the **Message Database** button.

Visibility/Details ***(See Button Object.)***

OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Lookup Text object on the screen and size it.

- To size it grab a handle and drag.
- To move the button, select it, click and hold left mouse button and drag.

Message Database

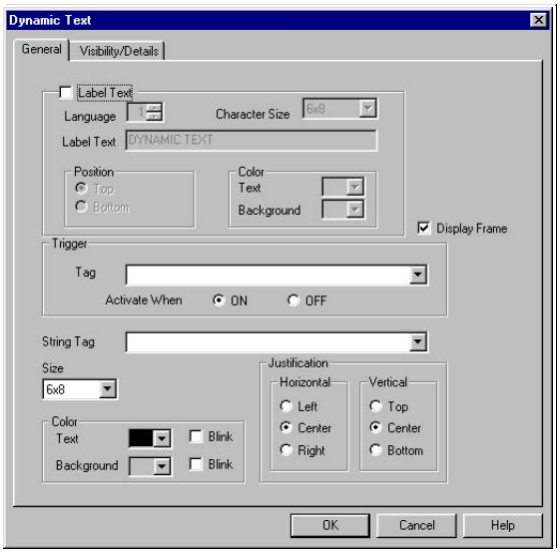
The **Message Database** stores programmed messages that can be accessed by the Lookup Text object. Create messages in the database dialog box to be used by the Lookup Text object. Up to 999 messages (limited by available memory) may be stored in the database. Each message may be up to 200 characters and you can choose various message attributes such as, **Character Size**, **Text Color**, **Background Color**, **Blink**, and **Language**. Use the scroll bar to view more messages. To add a new message, or edit an existing message, click on **Add/Edit** button**,** then click in the **Message Text** field and type your message. To delete a Message, select the message text, then click on the **Delete** button. A screen will appear asking you to confirm the delete message. Click on **OK** to delete message.

For more information on the Message Database — see page 187.

Dynamic Text

The **Dynamic Text** object will allow you to display the characters from ASCII values stored in a Tag. The tag will read a block of registers in the PLC. Each 16-bit register in the PLC can contain 2 ASCII characters. The maximum number of PLC registers in the block is 20 (a maximum of 40 ASCII characters). This object allows you to place text anywhere on the screen to provide information. It is typically used for displaying part numbers, VIN numbers, or production numbers. Dynamic Text is triggered by a bit Tag in the PLC. You choose whether the Text is triggered by the bit when it is in the ON state or the OFF state. The **Dynamic Text** object will then display a text string that is programmed in the PLC.

To put a Label on the Dynamic Text object, perform the following steps:



1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the text to be visible, click on the box to deselect

(the box will be empty).

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Choose the Trigger Tag Name:
This Tag allows the EZ Series Touch Panel to monitor a bit in the PLC and display text based on the ASCII values in a block of PLC registers.

1. Select the **Trigger** Tag Name by clicking on the down arrow to display the list or enter a Tag Name in the entry field. If the Tag Name is new, the **ADD NEW TAG DETAILS** dialog box will appear. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.

2. Choose to **Activate When ON** or **Activate When OFF**. If you choose ON, the Text will display when the bit is ON. When the bit is OFF, the Text will disappear.

NOTE: For a list of ASCII Characters that EZ Series Touch Panel Supports, see Appendix B.

Choose the String Tag Name:
The **String** Tag is the **PLC register** location where the values are read and displayed in a character string. The string may be up to 40 characters long. The **Address String** is the beginning register for the text.

Choose the Tag Name by clicking on the down arrow to display the list of Tags or type in the Tag Name in the entry field. If the Tag Name is new, the **ADD NEW TAG DETAILS** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC (ASCII STRING is the only choice). Click on the **OK** button.

Select the Dynamic Text Characteristics:

1. Select the **Character Size** from the available choices.
2. Select the **Color** of the **Text** and **Background** and whether or not they will **Blink**.
3. Choose the **Justification** of the Text that is displayed within the frame. Choose both **Horizontal** (Left, Center, or Right) and **Vertical** (Top, Center, or Bottom) justification for the Text within the frame.

Visibility/Details ***(See Button Object.)***

OK/Cancel/Help Buttons

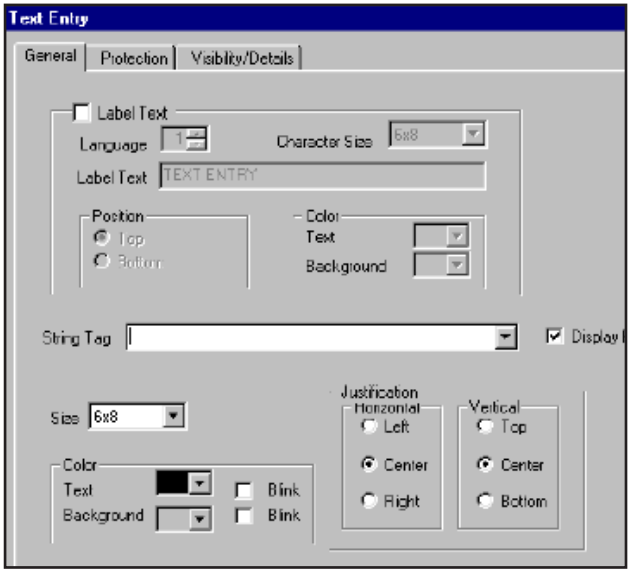
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place object on the screen and size it.

- To size the object, grab a handle and drag it to the size you want.
- To move the object, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Text Entry

The **Text Entry** object, when pressed on the panel, brings up a character entry (alphanumeric) keypad. This allows the operator to enter text up to 40 characters to send to a Tag assigned to an address in a PLC. It has many uses, some of which may be: to send part numbers or production numbers to a PLC, or to send a message to a PLC that will, in turn, route it to one or more plant



floor message display(s).

To put a Label on the Text Entry object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the text to be visible, click on the box to deselect (the box will be empty).

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

NOTE:
1. For a list of ASCII Characters that EZ Series Touch Panel Supports, see Appendix B.

2. Each ASCII character uses 1 byte of data. There are 2 characters per register. 40 character maximum uses 20 consecutive registers. The Address String is the first register of the consecutive register block.

Choose the String Tag Name:
The **String Tag** represents the PLC locations where the values are sent. The string may be up to 40 characters long.

1. Choose the **Tag Name** by clicking on the down arrow to display the list of Tags or type in the Tag Name in the entry field. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. (ASCII STRING is only choice available.) Select the **Number of Characters**. Click on the **OK** button.

Select the String Characteristics:

1. Select the **Character Size** from the available choices.
2. Select the **Color** of the **Text** and **Background** and whether or not they will **Blink**.
3. Choose the **Justification** of the **Text** that is displayed within the frame. Choose both **Horizontal** (Left, Center, or Right) and **Vertical** (Top, Center, or Bottom) justification for the Text within the frame.

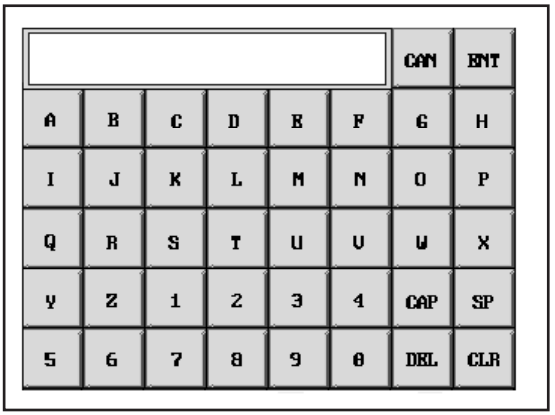
Protection ***(See Button Object.)***

Visibility/Details ***(See Button Object.)***

OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

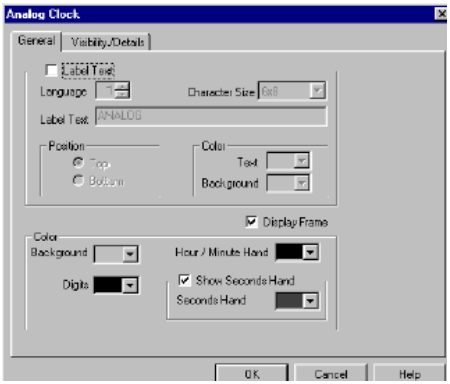
This is the Popup (alphanumeric) Keypad that displays on the EZ Series Touch Panel touchscreen when the Text Entry object

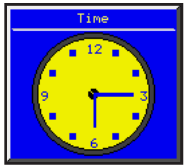


Clock Objects

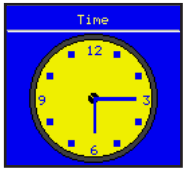
The **Clock** object allows you to display a real time clock, showing the current date, time, or both (analog clock displays time only.) It can display as either an **Analog** or **Digital Clock**.

NOTE: See page 163 to set up the Clock Attributes.





Clock with Frame and Label



Clock with Label, NO Frame

Clock with NO Frame, NO Label

Analog Clock

To put a Label on the Clock object, perform the following steps:

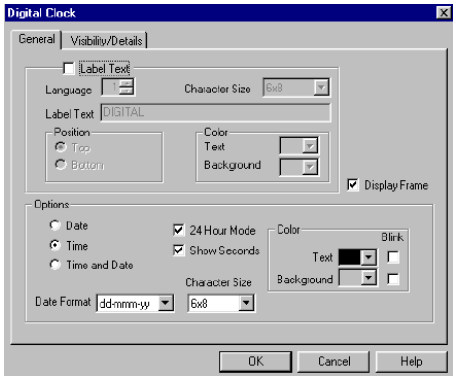
1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the clock to be visible, click on the box to deselect (the box will be empty).

To Choose how the Analog Clock will appear, perform the following steps:

1. Under **Color**, choose the color of the **Background** (face of the clock), **Digits**, and **Hour/Minute Hand**.
2. Select whether or not you want the **Second Hand** to Display and the **Color**, if enabled.

Visibility/Details ***(See Button Object.)***

Digital Clock



Clock with Frame and Label

Clock with Frame, NO Label

Clock with Label, NO Frame

Clock with NO Frame, NO Label

To put a Label on the Clock object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the clock to be visible, click on the box to deselect (the box will be empty).

To choose how the Digital Clock will appear, perform the following steps:

1. Under **Options**, choose to display just the **Date**, just the **Time**, or both **Time and Date**.
2. Select whether or not you want the Time to be displayed in **24-Hour Mode** and whether or not to **Show Seconds**.
3. Choose the **Date Format** from the available choices and the **Character Size**.
4. Under **Color**, click on the down arrow next to **Text** and **Background** to view the color palette. Click on a color swatch to select.
5. Click on the box under **Blink** if you want the **Background** or **Text** to Blink.

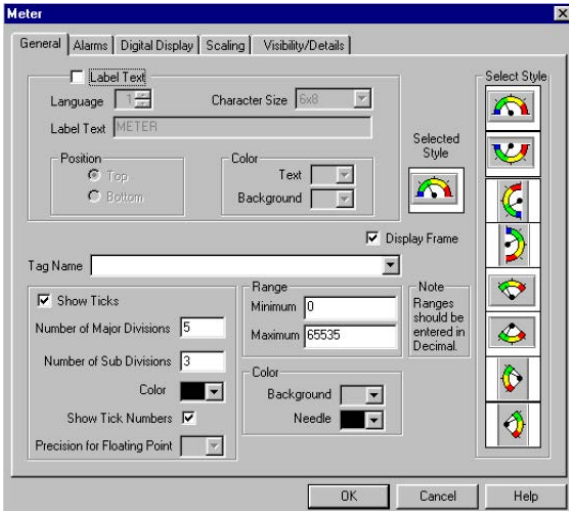
Visibility/Details ***(See Button Object.)***

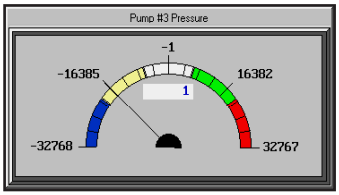
OK/Cancel/Help Buttons

Meter Object

A **Meter** object is used to display an analog gauge, such as a speedometer. The meter consists of a data tag, a data type, data value range, location of the meter on the screen, the sweep direction for the needle, the needle color, and the number of ticks to display.

In simulating an analog gauge, the Meter object displays a needle that sweeps through an arc as the tag value changes. Tick marks are displayed along the arc.





To put a Label on the Meter object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. Click on a Style under **Select Style**.
8. **Display Frame** is selected by default. If you do not want the frame around the Meter to be visible, click on the box to deselect (the box will be empty).

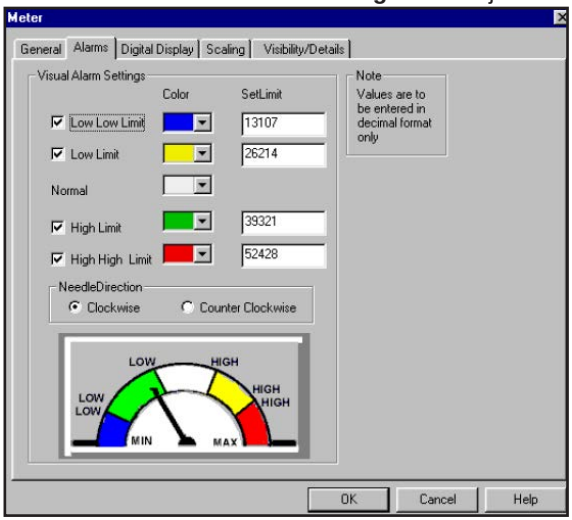
NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Enter a Tag Name:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name from the available choices.
2. If the Tag Name is new, the **Tag Entry** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.

Make the following selections to Format your meter:

1. If you want to show tick marks on your meter, click on box in front of **Show Ticks** to enable.
2. Next select the **Number of Major Divisions** and the **Number of Sub (Minor) Divisions** to display (maximum for each is 20).
3. Click on the down arrow next to **Color** to view the color palette for the Tick marks. Place the cursor over a color, and click to select.
4. If you want to show numbers indicating the value of a particular Tick mark, click on the box behind **Show Tick Numbers**.
5. If you have selected a Floating Point Tag, you may enable the **Precision for Floating Point** object. This will allow you to display the value of a tick mark on the meter with up to 5 decimal points.
6. Select the **Minimum** and **Maximum Range** of the values represented in the meter display. Ranges should be en-



NOTE: When entering limits, the ranges cannot overlap!

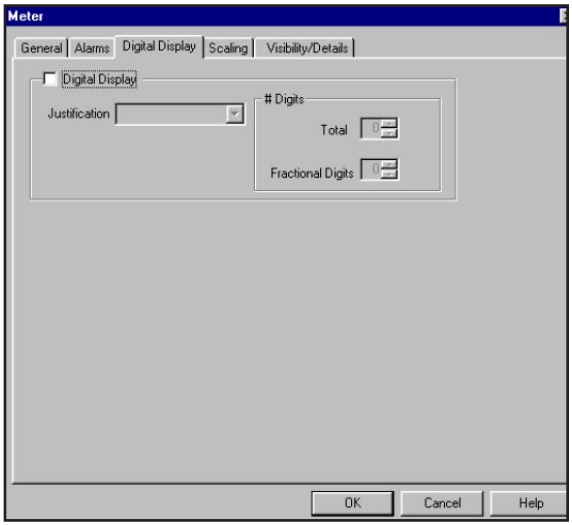
NOTE: These visual alarm settings are only for display on the meter, and are not related to actual alarms in the alarm database.

Objects

tered in decimal only

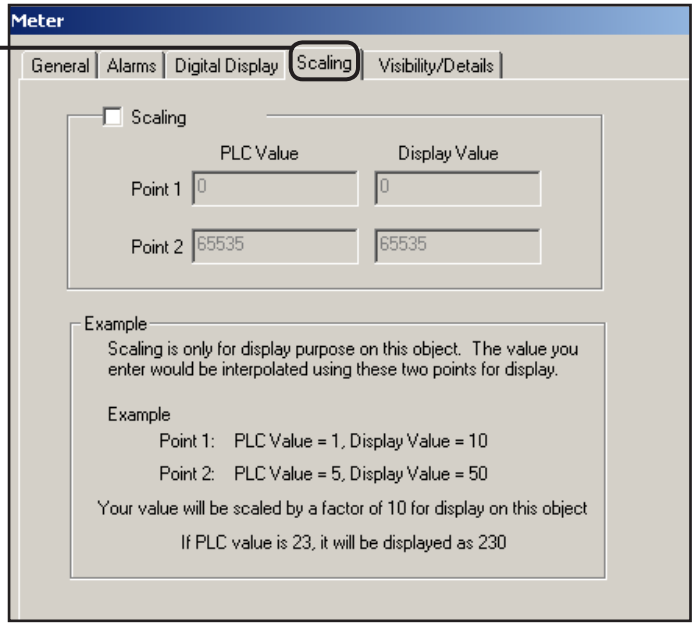
7. Select the **Color** of the **Background** and the **Color** of the **Needle** from the available choices.

Click on the Alarms Tab to set the Visual Alarm parameters: The **Visual Alarm Settings**, provide a color band on the arc representing various limit parameters set by the programmer. They provide the operator with a visual indication of current readings (as needle sweeps over area) that may or may not exceed/fall below important values for the process or function the meter is monitoring.



1. Click on the box in front of **Low Low Limit**, **Low Limit**, **High Limit**, and/or **High High Limit**, to display a visual alarm for that parameter.
2. Click on the down arrow under **Color** to view the color palette. Move your cursor over the color you want and click to select.
3. Enter the **Set Limit** for each of the parameters. They must fall within the **Range Minimum** and **Maximum** set under the **General** tab.
4. Choose the **Needle Direction**, **Clockwise** or **Counter-clockwise**.

Click on the Scaling tab if you want the Meter's Display Value to be different than the PLC Value.



Click on the Digital Display Tab to Format the numbers and how they will be displayed on the Meter:

1. Click on the box in front of **Digital Display** if you want the current register values to display on the meter.
2. Click on **Justification** and select from the following: **Leading Zeroes**, **Leading Spaces**, or **Trailing Spaces**.
3. Click on **Total** under **# Digits**. Here you will select how many digits, from 1 to 10 (depending on the Data Type of the Tag), that you want to display.
4. If you want **Fractional Digits**, enter 1 through 10 here (select 0 for none). For example, if your maximum value is 999, you would enter 3 under total digits. If your maximum value is 99.9, enter 3 under Total Digits and 1 under Fractional Digits.

Scaling Tab

Under the **Meter** object **Scaling** tab, you can scale the value in the PLC to another value on the Meter. Enter **Point 1** and **Point 2 PLC Values** and **Point 1** and **Point 2 Display Values**.

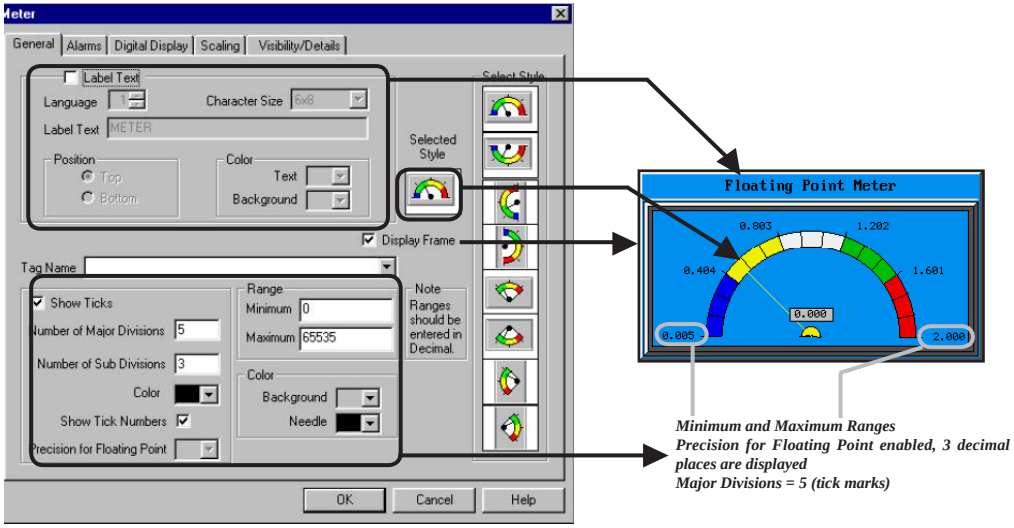
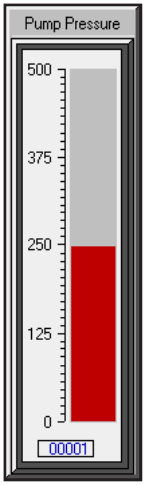
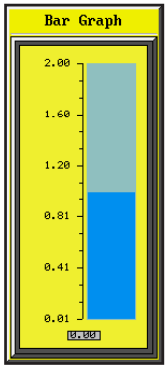


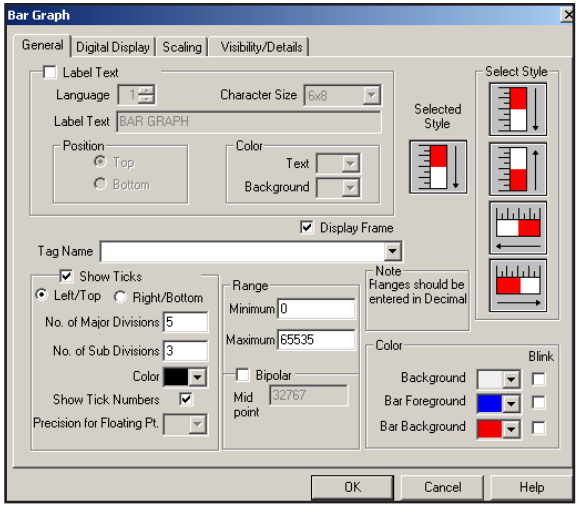
Illustration of how meter image on the panel corresponds to attributes programmed using the dialog box.

Bar Graph Object





The **Bar Graph** object allows you to monitor and display a tag value in a bar graph form on the screen. The Bar Graph can be displayed in various formats and can be programmed to read from top to bottom, left to right, right to left, etc.



To put a Label on the Bar Graph object, perform the following steps:

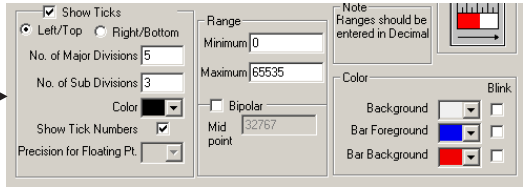
1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the Bar Graph object to be visible, click on the box to deselect (the box will be empty).

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Enter a Tag Name:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name from the available choices.
2. If the Tag Name is new, the **Add New Tag Details** dialog

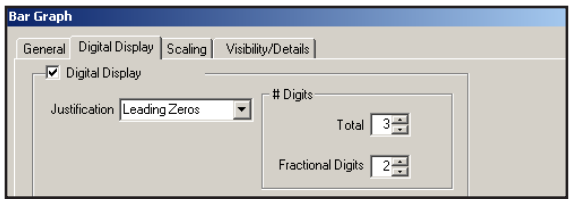
Maximum Number for the Major Divisions and Sub Divisions is 20!



box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.

Make the following selections to Format the Bar Graph:

1. If you want to show tick marks on your bar graph, click on box in front of **Show Ticks** to enable.
2. Select where you want the tick marks to be on the graph; **Left/Top**, or **Right/Bottom**.
3. Select the **Number of Major Divisions** and the **Number of Minor (Sub) Divisions** to display. ***The maximum ticks allowed for Major or Minor Divisions is 20.***
4. Click on the down arrow next to **Color** to view the color palette for the tick marks. Place the cursor over a color, and click to select.
5. If you want to show numeric values for the tick marks, click on the box behind **Show Tick Numbers**.
6. If you have selected a Floating Point Tag, the **Precision for Floating Point** entry will be enabled. This will allow you to display the value of a tick mark on the bar graph with up to 5 decimal points. Click on the down arrow to select number of decimal points.
7. Select the **Minimum** and **Maximum Range** of the values represented in the bar graph display. Ranges must be entered in Decimal.
8. If you want a Bipolar bar graph, click on the box in front of **Bipolar** and enter a **Midpoint** value. A **Midpoint** between



the Minimum and Maximum Range will appear.

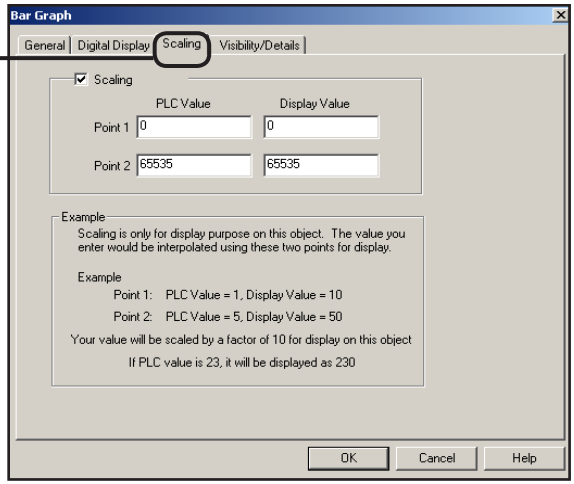
9. Under **Color**, click on the down arrows next to **Back-**

ground, **Bar Foreground** (fill) and **Bar Background** to view the color palettes and make your selections. Click on the box below **Blink** to enable that feature.

Click on the Digital Display Tab to Format the numbers and how they will be displayed on the Bar Graph:

1. Click on the box in front of **Digital Display** if you want the current register values to display on the bar graph.
2. Click on **Justification** and select from the following: **Leading Zeroes**, **Leading Spaces**, or **Trailing Spaces**.

Click on the Scaling tab if you want the Bar Graph's Display Value to be different than the PLC Value.



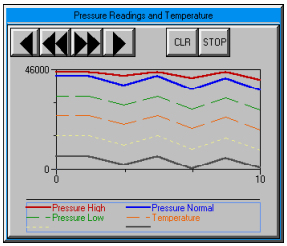
3. Click on **Total** under **# Digits**. Here you will select how many digits, from 1 to 10 (depending on the Data Type of the Tag), that you want to display.
4. If you want **Fractional Digits**, enter 1 through 10 here (select 0 for none). For example, if your maximum value is 999, you would enter 3 under total digits. If your maximum value is 99.9, enter 3 under Total Digits and 1 under Fractional Digits.

Scaling Tab

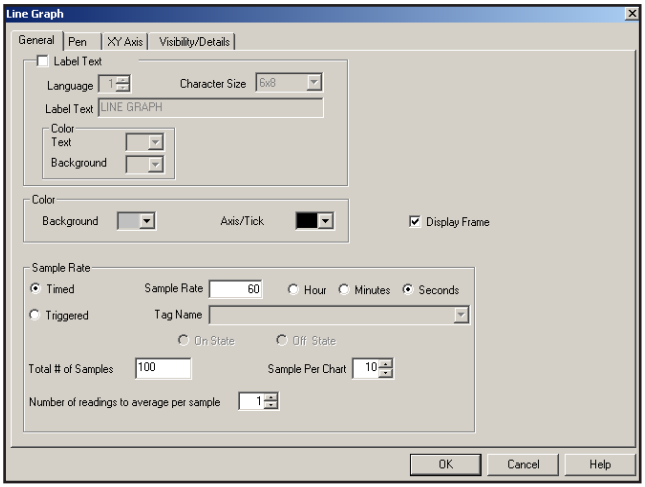
Under the **Bar Graph** object **Scaling** tab, you can scale the value in the PLC to another value on the bar graph. Enter the **Point 1** and **Point 2 PLC Values** and the **Point 1** and **Point 2 Display Value**s.

Visibility/Details ***(See Button Object.)***

Line Graph Object



The **Line Graph** object will continuously monitor specific Tags in the panel and display the value of these data tags as they change over time. This allows the panel to display the graph as soon as the screen containing the graph is selected. Up to 6 tags can be monitored per line graph and up to 100 line graphs can be programmed.



Line graphs are unique in that most of the work is done for you. The line graph plots the tag values on a line as they change over a period of time.

To put a Label on the Line Graph object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Select the **Background Color** and the **Axis/Tick Color** from those offered on the color palette. To select a Color, click on the down arrow to see the palette, and then simply click on the color swatch you want.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

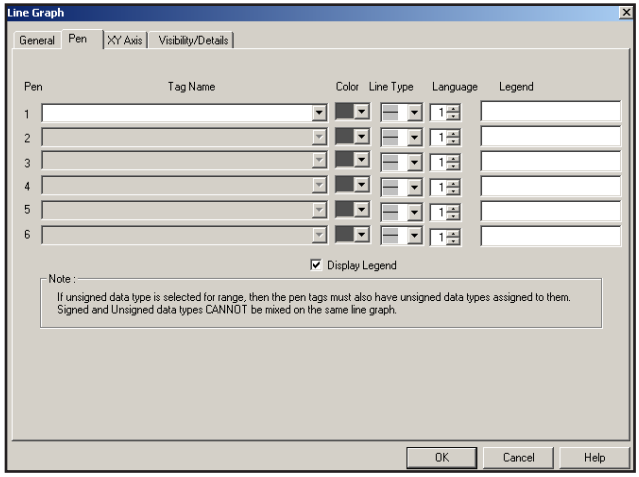
Display Frame is selected by default. If you do not want the frame around the Line Graph to be visible, click on the box to deselect (the box will be empty).

The **Sample Rate** for the Line Graph can be timed or triggered by an event.

Timed — how often, in **Seconds**, **Minutes**, or **Hours** the line graph will update. Enter this parameter next to **Sample Rate** and select (per) **Hour**, **Minutes** or **Seconds**.

Triggered — triggered by a bit that will be monitored to up date the line graph. The trigger state conveys whether the line graph will be updated when the monitor bit is on or off. Select an existing, or enter a new, **Tag Name** for the monitor bit.
Select **On State** or **Off State**.

NOTE: The minimum number of readings is two!

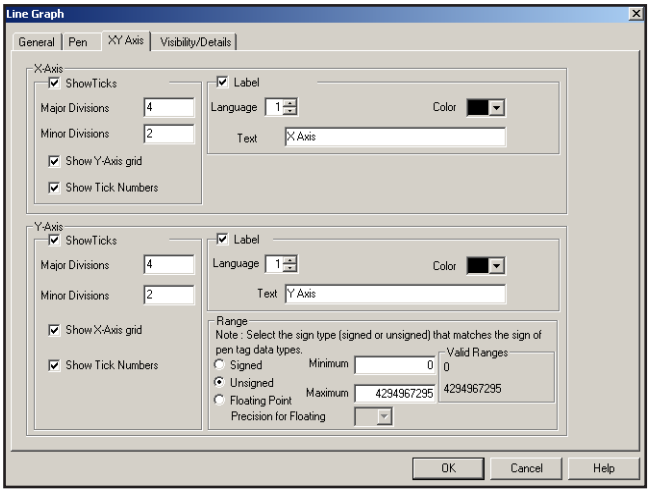


Total # of Samples is the number of readings stored in the line graph at one time. The maximum number of readings is 999. **Sample per Chart** is the maximum number of readings that will be visible on the chart. Use the arrow buttons on the object to view more of the chart.

Number of readings to average per sample: You may choose to have the graph average a number of readings in a sample and display that sample average on a the chart. For instance, if you want to take several temperature readings in an hour's time and then have the graph display this average as one sample on the chart. Select a number between 1 and 255.

Click on the Pen tab to program individual readings/lines:

1. Click on the down arrow to select the **Tag Name** (or enter a new tag name) for the register you want Pen 1 (or 2, 3, 4, 5, 6) to monitor and illustrate.



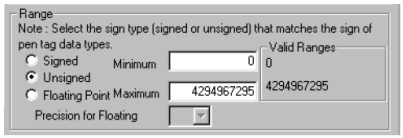
2. Select the **Color** and **Line Type** from the available choices.
3. Select the **Language** Number (1–9).
4. Click in the "**Legend**" field and type in the text you would like to display in the legend for Pens 1 through 6. (The legend will display the Color and Line type and what you enter in the Legend field.) Limit the legend names to 16 characters (maximum).
5. Click on the box in front of **Display Legend** if you want the legend to appear on the line graph object.

Click on the XY Axis tab to continue formatting your Line Graph:

The Line Graph is set up with the vertical axis (Y) representing the Tag value (Value), and the horizontal axis (X) represents time (Readings).

Under X-Axis make the following selections:

1. Choose whether or not to **Show Ticks** for the X-Axis (Reading). Click on the box in front of **Show Ticks** if you want them to display on the object.
2. Enter the number of **Major Divisions** and the number of **Minor Divisions** you want to display on the graph. 20 tick marks are the maximum allowable for major and minor divisions.

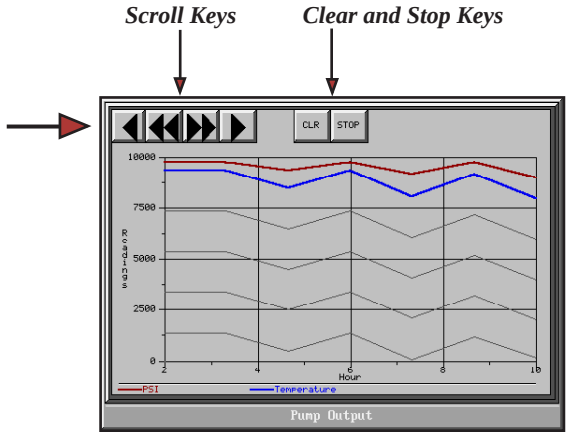


3. Choose whether or not to **Show X-Axis Grid** and **Show Tick Numbers**.
4. Click in the box in front of **Label** if you want if you want a label for the X-Axis. Here you will enter the label **Text** and make selections for the text **Language** number, and **Color**.

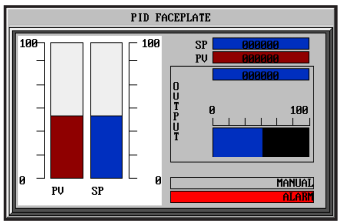
Under Y-Axis make the following selections:

1. Choose whether or not to **Show Ticks** for the Y-Axis (Value). Click on the box in front of **Show Ticks** if you want them to display on the object.
2. Enter the number of **Major Divisions** and the number of **Minor Divisions** you want to display on the graph. 20 tick marks are the maximum allowable for major and minor divisions.
3. Choose whether or not to **Show Vertical Grid** and **Show Tick Numbers**.
4. Click in the box in front of **Label** if you want if you want a label for the Y-Axis. Here you will enter the label **Text** and make selections for the text **Language** number, and **Color**.
5. Under **Range**, click on **Signed, Unsigned, or Floating Point** (they must match Pen tag type.) **Valid Ranges** will display for your selection.
6. Enter a **Minimum** and **Maximum** Range within the **Valid Range** displayed.
7. If you have selected **Floating Point**, you may choose 0 to 5 decimal points to display on the Y- Axis Major Divisions for precise graph readings. Select 0, 1, 2, 3, 4, or 5 decimal point display next to **Precision for Floating.**

*Not all of the line graph may be shown on the panel. Use the **ARROW** keys to scroll forwards and backwards along the graph. Press the **CLR** button to clear the readings displayed on the line graph. Press the **STOP** button to stop the line graph from displaying the current readings.*



PID Faceplate Object

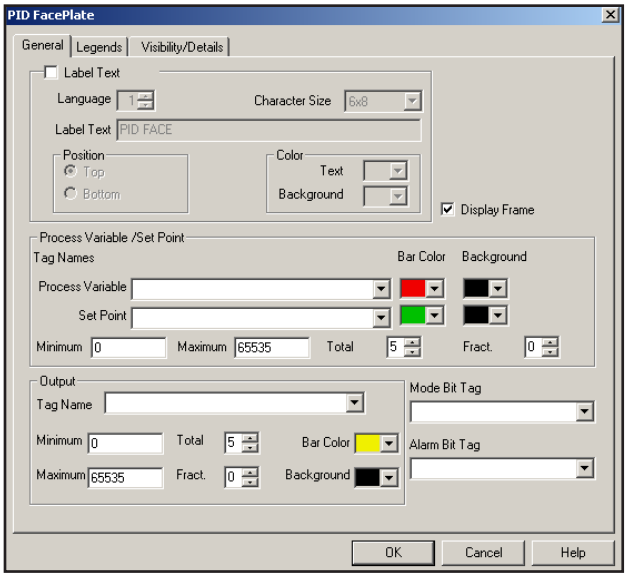


In addition to a ladder logic program, some PLCs have process control loop capability. These PLCs use a Proportional Integral Derivative (PID) algorithm to generate the control output value. The **PID Faceplate**, below, is an object that reads three controlled values of the PID loop and displays them in the form of a bar graph. This graph provides valuable and timely process information, that allows the operator to take suitable action at the appropriate time.

The **PID Faceplate** also monitors two discrete bits: **Mode Bit** and **Alarm Bit**. **Mode Bit** tells the operator whether the process is in **Auto Mode** or **Manual Mode**. **Alarm Bit** tells the operator if any alarm for the process is active or not.

Process Variable (PV) is the controlled variable in the process. It is the actual value measured.

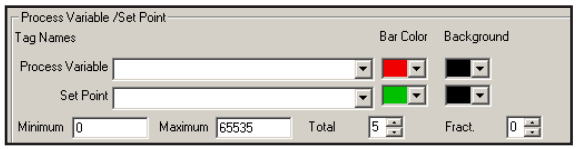
Set Point (SP) is the theoretical perfect value of the Process Variable. Output Variable controls the Process Variable. Using PID algorithm, the PLC calculates this value and uses it to keep the Process Variable as close the to Set Point value as possible.



To put a Label on the PID Faceplate object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)

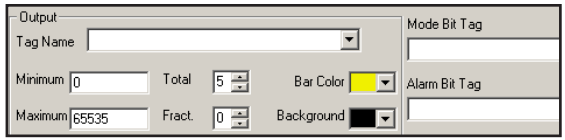
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the PID Faceplate to be visible, click on the box to deselect (the box will be empty).



NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Under Process Variable/Set Point you will make the following selections:

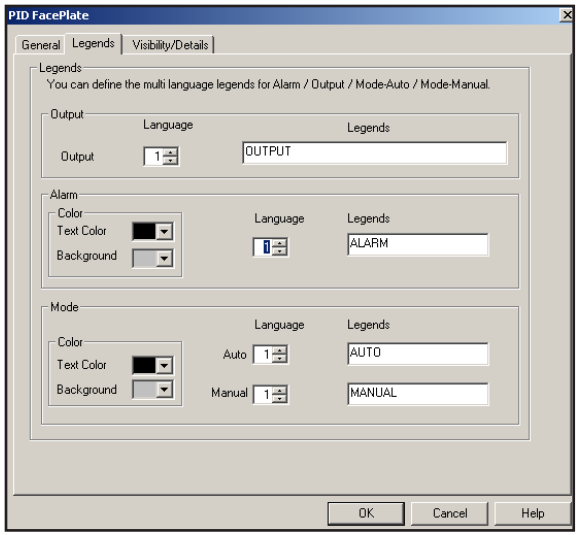
1. Select the **Tag Name** for **Process Variable** that will monitor the process.
2. Select the **Bar Color** and **Background Color** for the **Process Variable** as displayed on the PID Faceplate object.
3. Select the **Tag Name** for the **Set Point**.
4. Select the **Bar Color** and the **Background Color** for the **Set Point** as displayed on the PID Faceplate object.
5. Enter the **Minimum** and **Maximum** Range for the bar graph. Select the **Total** number of digits you want to display and how many, if any, of those digits should be **Fractional**.



Under Output you will make the selections for the output as displayed on the PID Faceplate object:

1. Click on the down arrow to reveal **Tag Names** (or enter a new tag name) and make your selection.
2. Enter the **Minimum** and **Maximum** ranges for the Output bar graph display.
3. Select the **Total** number of digits you want to display and how many, if any, of those digits should be **Fractional**.

4. Choose the **Color** for the **Bar** and **Background**.



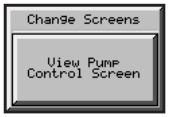
5. The PID Faceplate monitors two discrete bits:

   - **Mode Bit** tells the operator whether the process is in Auto Mode or Manual Mode. Enter the tag name for the discrete bit to be monitored for Mode.
     ON= Manual, OFF = Auto
   - **Alarm Bit** tells the operator if any alarm for the process is active or not. Enter the tag name for the discrete bit to be monitored for active alarms.
     ON = Alarm, OFF = no display

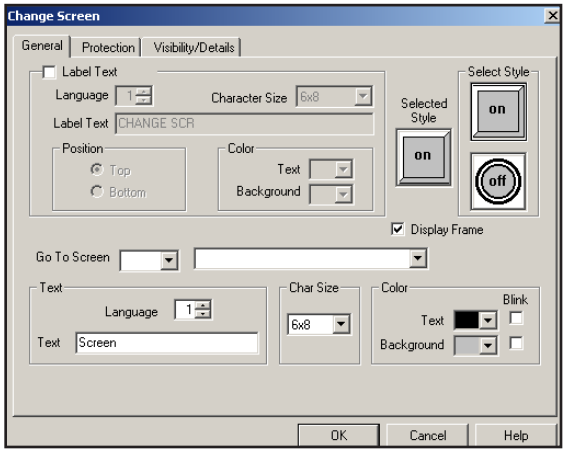
Click on the Legend tab to make your selections for the Legend that will display on the object:

1. Under **Output** , select the **Language** number for the Legend text you want to enter. You may program up to 9 different languages to display on the legend.
2. Type in the text for the **Legend**.
3. Under **Alarm**, select the **Text** and **Background Color**.
4. Select the **Language** number, and type in the text you want to appear for the **Legend**.
5. Under **Mode**, select the **Text** and **Background Color**.
6. Select the **Language** number for **Auto** and **Manual**.
7. Type in the **Legend** text for **Auto** and for **Manual** that you want to appear on the object

Change Screen Object



This object will allow EZ Series Touch Panel to change to (display) another Screen.



NOTE: See Project Attributes > PLC to Panel > Switch to Screen Number (page 188) for information related to changing screens from the PLC.

To put a Label on the Change Screen object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the button to be visible, click on the box to deselect (the box will be empty).

To Create the Change Screen Button object:

1. Select the **Style** of the button from the available choices.
2. Click in the empty field next to **Go To Screen** and type in the name of the screen or click on the down arrow for a list of screens in the project and select.
3. Select the **Language** Number (1–9) for the **Text** that will appear within the button.
4. Type in the **Text** that you wish to appear within the button.

5. Select **Character Size** from the available choices.
6. Select the **Color** of the **Text** and the **Background** (inside the button) from the available choices.
7. Click in the box under **Blink** if you want the **Text** or **Background** to blink.

Protection ***(See Button Object.)***

Visibility/Details ***(See Button Object.)***

OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

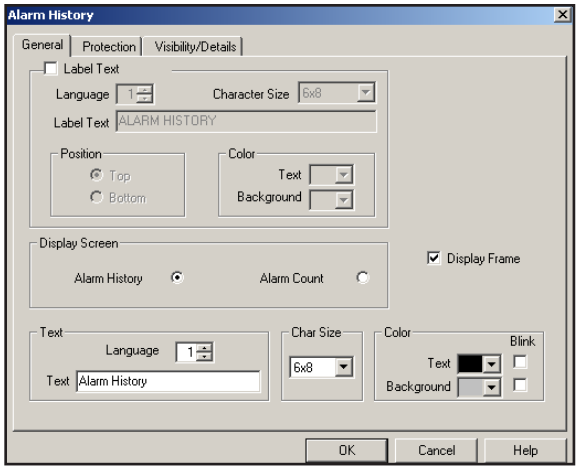
Alarm History Object

The **Alarm History Object** allows you to configure a button, that when pressed, will provide the **Alarm Count** or **Alarm History**. **Alarm Details** are accessed through the Alarm History object. Alarms are set up in the Alarm Database (see page 176 for setup instructions.)

The **Alarm Count** lists all alarms and shows the total count for each alarm.

The **Alarm History** will show each alarm that has occurred with the most recent at the top. When you press the **Alarm Detail** button, you will get the Entry Number (No.) of the Alarm, when it was activated (time and date), when it was cleared, actual value, high/low limits, and which limit is tripped (HIGH/LOW/DIS).

NOTE: The steps necessary to program your EZ Series to monitor the PLC for errors and trigger an alarm are provided in Appendix A, Troubleshooting, "How do I Log and Display a PLC Error Message?"



To put a Label on the Alarm History object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available sizes.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

NOTE: An active alarm will be displayed across the bottom of the panel screen. To see a history, use the Alarm History object.

7. **Display Frame** is selected by default. If you do not want the frame around the object to be visible, click on the box to deselect (the box will be empty).

Under **Display Screen**, you will choose which alarm screen you want to display when the Alarm History button object is pressed — Alarm History or Alarm Count. It should be noted that you can switch from one to the other from either screen.

Under **Text**, choose the **Language**, **Character Size**, **Color** of **Text** and **Background**, and whether or not you want to enable the **Blink** feature for the text that will appear within the Alarm History button. Enter the **Text** that you want to appear.

Protection ***(See Button Object.)***

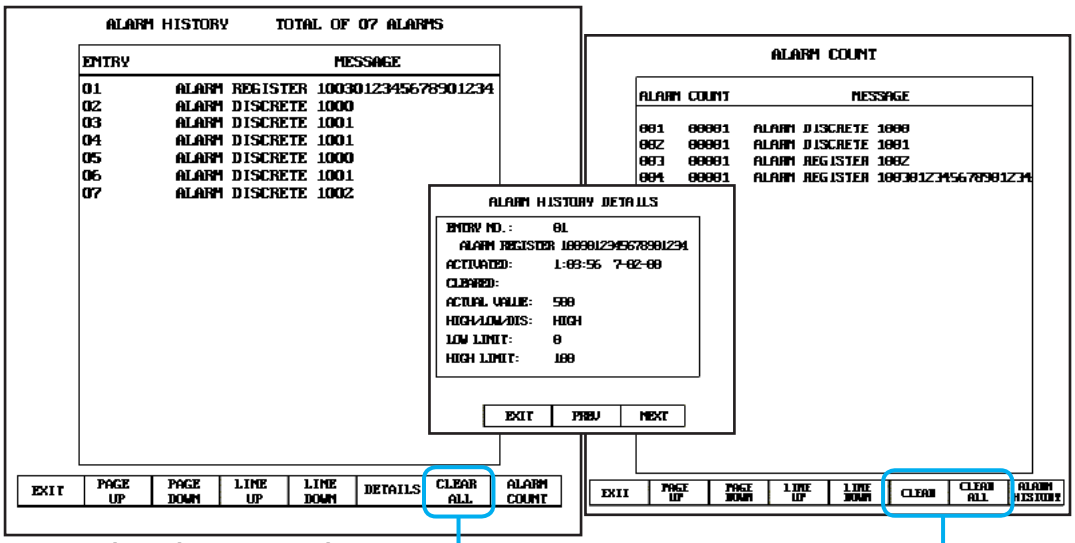
Visibility/Details ***(See Button Object.)***

OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

PLEASE NOTE:

Use the Alarm Protection feature to keep operators from using the CLEAR ALL or CLEAR buttons on the Alarm History and/or Alarm Count screens that display on the panel (screens shown below). You can limit access to these buttons, so that an operator must enter a password on the popup keypad to be able to use them. For information on how to do this, see Setup >Project Attributes > Alarm Protection, page 199.)

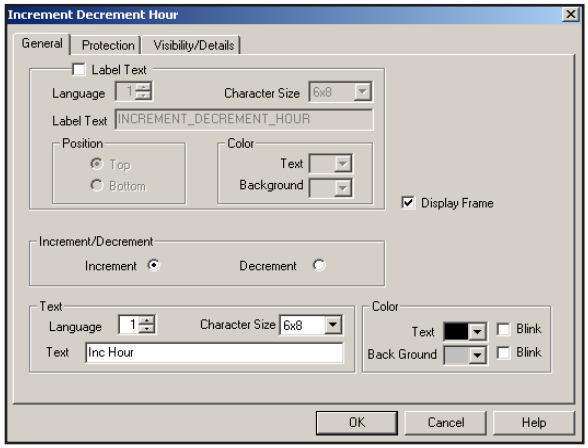


System Objects

The System Objects allow the operator control over certain panel functions and settings.

Increment/Decrement Hour

The Increment/Decrement Hour object allows you to place a button on the screen that allows you to adjust the hour (up or down) of the internal Real-Time clock.



NOTE: This object is to be used with the Internal clock, only. Do not use the Increment/Decrement object if you have chosen External clock under Project Attributes > Clock.

To Create Label Text, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the button to be visible, click on the box to deselect (the box will be empty).

Choose the function of the button:
Select **Increment** or **Decrement** for the button function. If increment is selected, when pressed it will increase the time on a clock object by one hour. If decrement is selected, when pressed it will decrease the time on a clock object by one hour.
Enter Text for the button object:
Choose the **Language**, **Character Size**, **Color** of **Text** and Background, and whether or not you want to enable the **Blink** feature for the text that will appear within the button and/or the background. Enter the **Text** that you want to appear.

Protection ***(See Button Object.)***

Visibility/Details ***(See Button Object.)***

OK/Cancel/Help Buttons

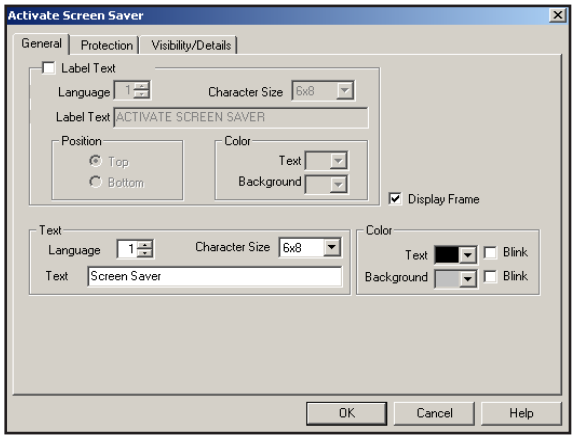
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Increment/Decrement Clock Button on the screen and size it.

- To size the button, select it, grab a handle and drag to the size you want.
- To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Activate Screen Saver

The **Activate Screen Saver** object allows you to place a button on the screen that enables you to activate the panel screen saver. (Screen Saver time-out is programmed under **Setup > Project**



Attributes > General Tab > Display Saver.)

To put a Label on the object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the button to be visible, click on the box to deselect (the box will be empty).

Enter Text for the button object:

Choose the Language, Character Size, Color of Text and Background, and whether or not you want to enable the Blink feature for the text that will appear within the button. Enter the Text that you want to appear.

Protection ***(See Button Object.)***

Visibility/Details ***(See Button Object.)***

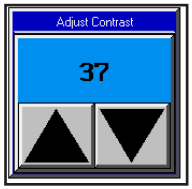
OK/Cancel/Help Buttons

- Click on **OK** button to save your selections, exit the dialog box, and place the object on the screen.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

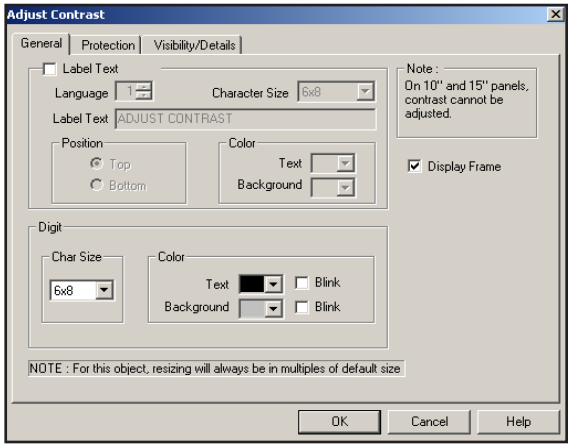
Place Screen Saver Button on the screen and size it.

- To size the button, select it, grab a handle and drag to the size you want.
- To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Adjust Contrast



Use the **Adjust Contrast** object to place a button on the EZ Series Touch Panel screen that gives you access to the panel's adjust contrast feature. Use the UP and DOWN arrows that appear on the button to adjust the screen contrast. The current setting will appear on the button above the arrows and will change as you press the arrow keys.



NOTE: Contrast cannot be adjusted on EZ Series Touch Panel TFT models including 6", 8", 10" and 15" panels.

To put a Label on the Adjust Contrast object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)

3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the button to be visible, click on the box to deselect (the box will be empty).

Select Digit Format:
This allows you to program characteristics of the current contrast setting that will display on the button. The current setting will appear on the button above the UP and DOWN arrows. Use the arrows to increment or decrement the setting. Select the **Size** and **Color** of the characters (**Text**) and whether or not they will **Blink**, and set the color of the button **Background** and whether or not it will **Blink**.

Protection ***(See Button Object.)***

Visibility/Details ***(See Button Object.)***

OK/Cancel/Help Buttons

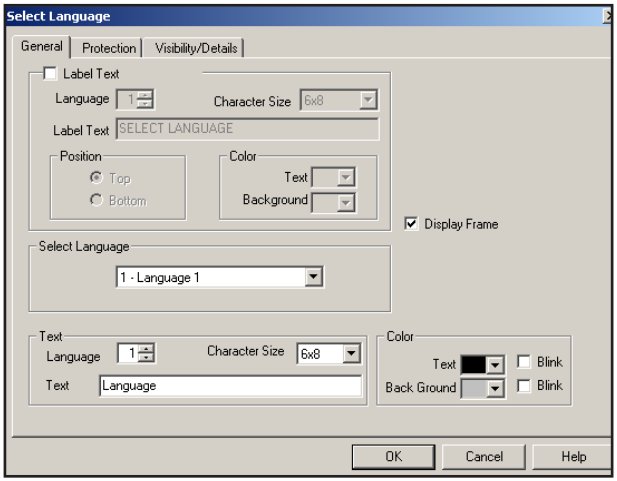
- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Adjust Contrast Button on the screen and size it.

- To size the button, select it, grab a handle and drag to the size you want.
- To move the button, select it, click and hold left mouse button and drag to where you want it to appear on the screen.

Select Language

The **Select Language** object allows the operator to change the Language by pressing a button on the panel. Text that has been programmed for that language will convert to the language that the operator selects. If an object's text has not been programmed for the language selected, it will default to Language 1.



To put a Label on the Select Language object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the button to be visible, click on the box to deselect (the box will be empty).

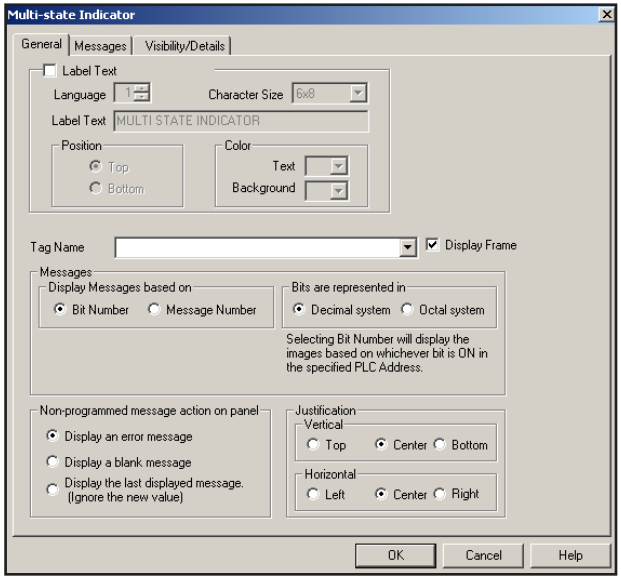
Select Language that you want to switch to.
Languages are named under **Setup > Project Attributes > Language** tab.

Enter Text for the button object:
Choose the Language, Character Size, Color of Text and Background, and whether or not you want to enable the Blink feature for the text that will appear within the button. Enter the Text that you want to appear.

Multi-state Indicator

Multi-state Indicator is an object that is created to display pre-programmed messages within a frame on the panel screen. Each object has pre-programmed messages that are stored in the object itself. In other words, Messages are stored in the object, **not** the Message Database. It displays one message at a time based on a bit (the one that is set), or a value in the tag. The maximum number of messages that can be programmed is 255. Click on the Messages tab to program messages in the database.

Messages designed in the Database are numbered based on the tag data type. If the Value corresponding to the Tag Name is 10, Message Number 10 will be displayed within the Multi-state Indicator Text Frame.



To put a Label on the Multi-state Indicator object, perform the following steps:

1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

NOTE: Selecting Bit Number will display the messages based on whichever bit is ON in the tag. Selecting Message Number will display the messages based on the tag value.

6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

Display Frame is selected by default. If you do not want the frame around the object to be visible, click on the box to deselect (the box will be empty).

Enter a Tag Name:

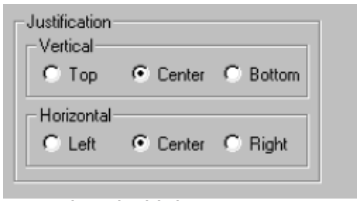
1. Enter a **Tag Name** or click on the down arrow and select the Tag Name from the available choices.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.

Choose how Messages will be displayed:

Messages can be displayed based on bit (whichever is set), or based on a value in the tag. The maximum number of messages that can be programmed for an object depends on the tag data type.

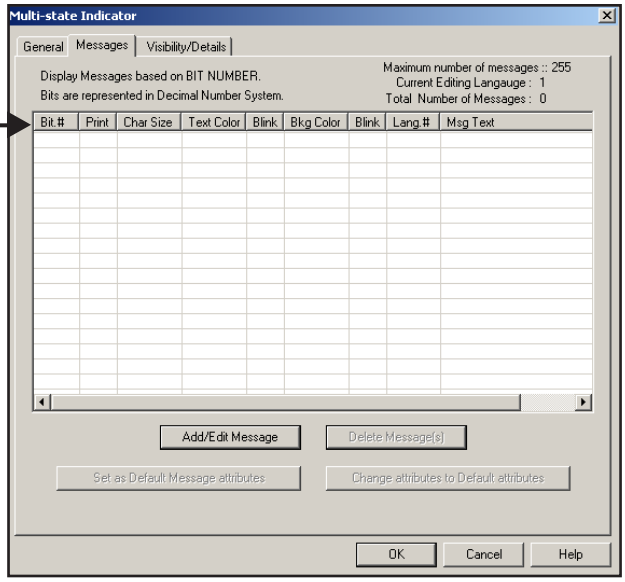
1. Under **Messages**, select to **Display messages based on Bit Number** or **Message Number.**

2. If you chose **Bit Number**, select either **Bits are represented in Decimal system** or in **Octal system**.
3. Next you will choose the **Non-programmed message action on panel**. If a value or a message number is sent to the panel that does not have a valid programmed message

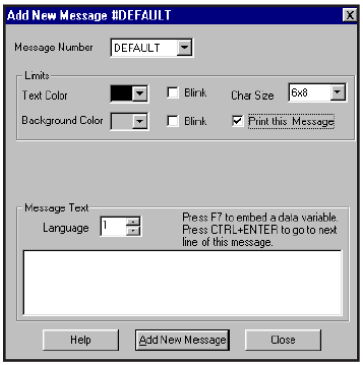


associated with it, an error message will display by default (**Display an error message** is selected). You may choose instead to have the panel **Display a blank message**, or **Display the last displayed message (ignore the new value)** .

The first column will either be titled Msg# or Bit # depending on what you selected previously.



4. Select **Justification** of Text**:** This is a local attribute for each Multi-state Indicator object. So, a message in one object can be left justified within the frame while in another object, it can be right justified. Select the **Horizontal** and **Vertical** justification for the text as it will appear within the frame when displayed on the panel.



Enter Message and Attributes:
Messages created in each Multi-state Indicator object are saved in the object. (Only the Lookup Text object uses the project Message Database.)

1. Click on the **Messages** Tab.
2. Click on the **Add/Edit Message** button. If you have selected to **Display Messages based on "Bit Number"** (under the **General** tab), the dialog box shown to the left will appear. (See Step 3, below, if you are displaying a message based on message number.)
   a. Select the **Message Number** that you want to display (Decimal: DEFAULT or 0-15 for 16-Bit Address, 0-31 for 32-Bit Address. Octal: DEFAULT or 0-17 for 16-Bit Addresses or 0-37 for 32-Bit Address). A DEFAULT Message can be programmed that will display if NO bit is ON in the register address. If you choose not to program a DEFAULT message, an error message will

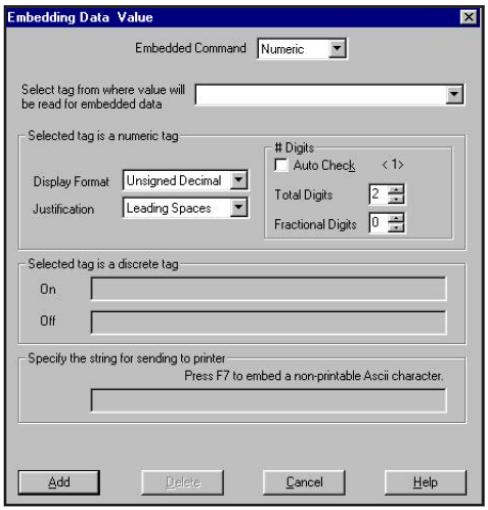
NOTE: To set the printer parameters, see page 156, Project Attributes, Printer tab. To set the panel COM1 port to "Printer," see Appendix D.

display on the panel if NO bit is ON (If you don't want error messages to display, you must deselect the **Display Error Message** option under the **General** tab.)

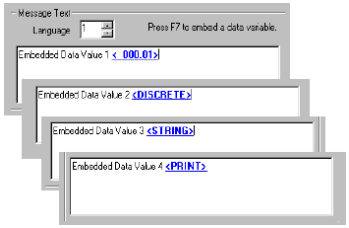
b. Under **Limits**, select the **Text Color** and the **Background Color** and whether or not they will **Blink**.
c. Select the **Character Size** from the available choices.
d. Click on the box in front of **Print this Message** if you want the message to print when triggered. (See note to the left.)
e. Select the **Language Number (1–9)**.
f. Enter the **Message Text** (up to 200 characters) for the message you are creating, or edit the text of the Message Number selected, above.
g. Press the **F7** function key on your keyboard to **embed a data value** within the message. (See Step 4, below, for more information on embedding a data value.)

Embedding a Data Value

3. Click on the **Add/Edit Message** button. If you have selected to **Display Messages based on "Message Number"** (under the **General** tab), the dialog box shown to the left will appear.



a. Enter a **Message Number** consistent with the Data Type selected (Signed, Unsigned, BCD).
b. Under **Limits**, select the **Text Color** and the **Background Color** and whether or not they will **Blink**.
c. Select the **Character Size** from the available choices.
d. Click on the box in front of **Print this Message** if you



Embedded data values are represented as shown above in the message where they are programmed. They will be replaced with the actual value when displayed in the message on the panel. Up to 4 embedded data values may be programmed in each message.

want the message to print when triggered.

e. Select the **Language Number (1-9)**.

f. Enter the **Message Text** (up to 200 characters) for the message you are creating, or edit the text of the Message Number selected, above.

g. Press the **F7** function key on your keyboard to **embed a data value** within the message. (See next step to embed a data value.)

4. The following dialog box will appear when you press F7 to embed a data value within a message.
Special characters in the message determine where the embedded data from the registers should go. Up to four data values may be embedded in a single message. Program how the data value will be displayed as follows:

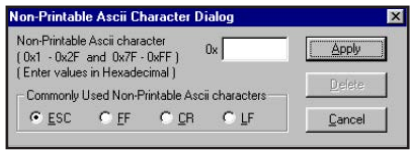
a. Select the **Embedded Command** that determines the type of value to embed. Available choices are **Discrete**, **Numeric**, **String** and **Printer**. Depending on what type command you choose, certain areas of the dialog box become available or unavailable (grayed out) for selection or data entry.

b. If you choose **Discrete**, **Numeric**, or **String**, select or enter the Tag name where the data value will be read by clicking in the field or on the down arrow next to **Select tag from where value will be read for embedded data**.

c. If you have selected **Numeric**, the options under **Selected tag is a numeric tag** will be enabled**.**

d. Select **Display Format** from the available choices.

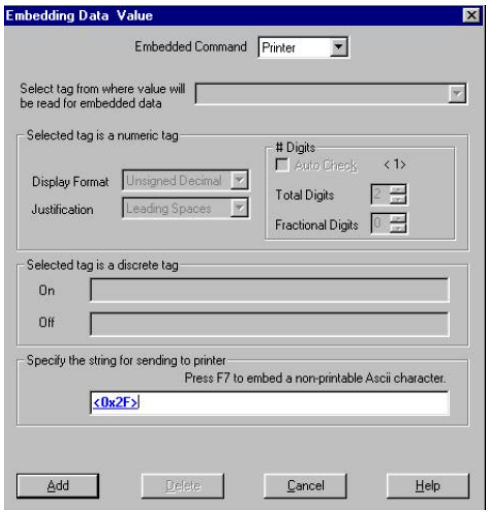
e. Select **Justification** from **Leading Zeroes**, **Leading Spaces**, or **Trailing Spaces.**



f. Under **# Digits**, click on the box in front of **Auto Size** if you want to have the panel automatically determine the number of digits to be placed for the embedded value. **Total Digits** and **Fractional Digits** will be disabled if you choose **Auto Size**.

NOTE: Consult your printer manual for appropriate printer ASCII character commands.

g. Also, under # **Digits**, you may enter the **Total Digits** that you want to display, and enter the **Fractional Digits** you want to display (leave at default, 0, if you do not want fractional digits).

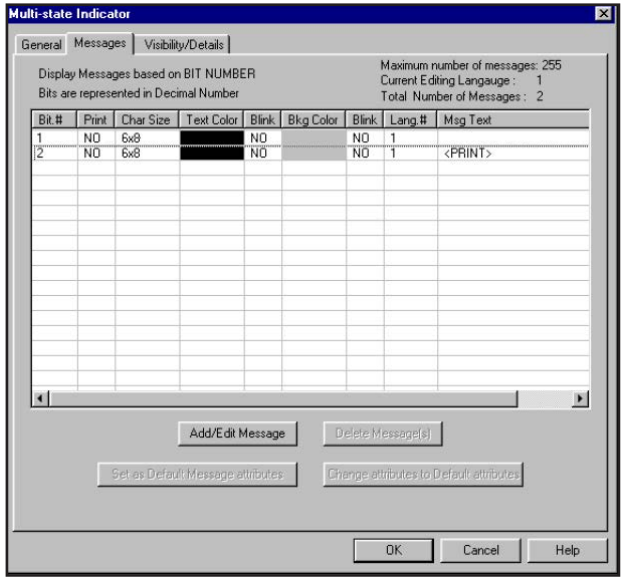


h. If you have selected **Discrete**, the fields under **Selected tag is a discrete tag**, will be available. Enter the text that you want to appear within the message when the Discrete register in **ON** and when the Discrete register is **OFF**.

i. If you have selected **Printer** under **Embedded Command**, the field, **Specify string for sending to printer**, will be available.

This example shows how an embedded printer command will be represented in a message

PROGRAMMING TIP:
If you want the Multi-state Indicator object to act as a Multi-state Indicator "Light," simply create your Messages with different Background Colors and no Message Text. Use the Blink feature to draw the operator's attention!



j. Enter the ASCII string that you want to send to the printer.

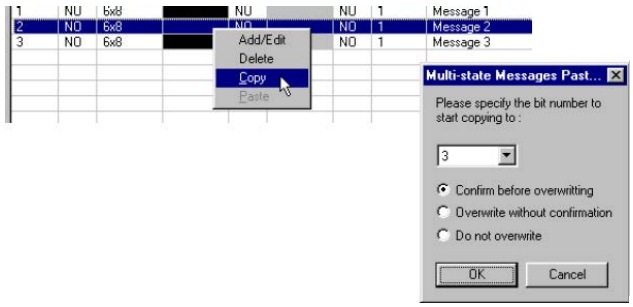
k. To embed a **non-printable ASCII character**, click in the field where you want it to appear and press F7. The following dialog box will appear.

l. Enter values in Hexadecimal in field next to **0x**, or you may click in front of **ESC** (for escape), **FF** (form feed), **CR** (carriage return), or **LF** (line feed) to embed these commonly used printer commands.

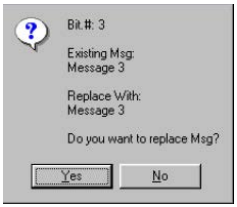
m. Click on **Apply** to enter your selections. You will exit the **Non-Printable ASCII Character** dialog and return to the **Embedding Data Value** dialog.

n. The ASCII characters will appear in blue, and underlined, in the printer string field

Copy Messages



When you have selected the Confirm before overwriting option, the following message will appear. Click on YES, to replace message, or No to cancel the overwrite.



o. Press the **Add** button to add the embedded data to the message. You will return to the **Add New Message** dialog. When inserted in a message, each **Embedded Data Value** will be represented in blue, and underlined, as shown below.

5. You may continue to add messages or click on the **Close** button to return to the **Messages** tab dialog. Your programmed messages will display in the list.

6. If you want a programmed message's attributes to become the default for all new messages created, click on the message in the list (to highlight) and then click on the **Set as Default Message Attributes** button.

7. If you want to change a programmed message to the current default attributes, click on the message in the list and then click on the **Change Attributes to Default Attributes** button.

8. To copy a Message, click on it in the list to highlight and then right click your mouse. A popup menu will appear. Click on **Copy**.

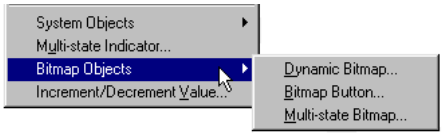
   a. Then click on **Paste** and the window shown to the right will appear.
   b. Select the **message number** or **bit number** that you want to copy the message to.

   c. You may also choose to have the software **Confirm before overwriting**, **Overwrite without confirmation**, or **Do not overwrite** (a message). Click on the radio button in front of the option you want to enable.

   d. Check to ensure that you have made the proper selections and then click **OK** to accept, or **Cancel** to quit without copying.

   e. You can make changes to the message you have copied by clicking on it and then selecting **Add/Edit.**

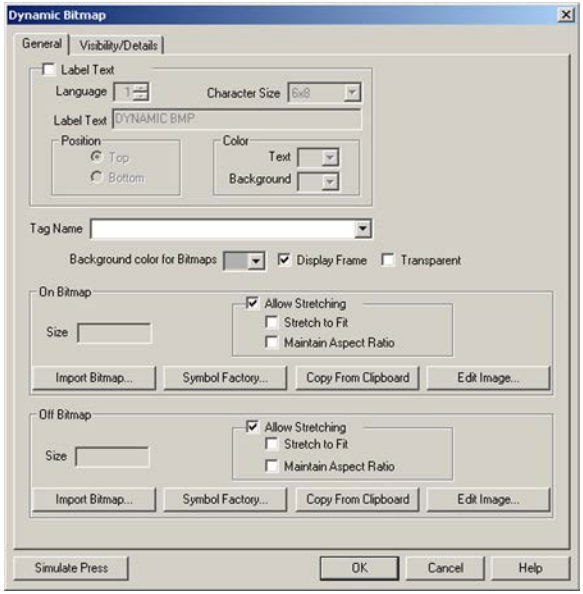
Bitmap Objects



Bitmap Objects allow you to create simple to complex objects. You can use the extensive built-in **Symbol Factory** library to copy and paste hundreds of graphic files directly to the project screen. You can also use your own **bitmap (.bmp), Windows Metafile (.wmf), or Windows Enhanced Metafile (.emf)** graphic files. They can be arranged and positioned in just about any manner you prefer

Dynamic Bitmap Object

A **Dynamic Bitmap** can show a visual representation of a process. There are two bitmaps per object, one that is shown when a bit is ON and another that is displayed when the bit is OFF. For example, you could create a green blower and a red blower to display. If the process is running, the green blower would be shown. If the



process is not running, the red blower would be displayed.

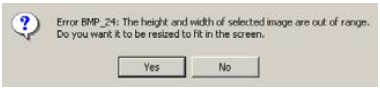
To put a Label on the Dynamic Bitmap object, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.

5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

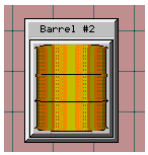
NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

IMPORTANT NOTE: (SYMBOL FACTORY option) To size a symbol, go to Options in the Symbol Factory when selecting the symbol, or see page 170 for instructions.

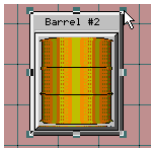


To create On Bitmap and Off Bitmap:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name from the available choices.
2. If the Tag Name is new, the **Tag Entry** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.
3. Select **Background color for Bitmaps.** Click on the down arrow to view the color palette. Select the color for the background of the Bitmap object.
4. Select whether or not you want to **Display Frame** (selected by default) around the bitmap and whether or not you want the Background to be **Transparent**.
5. Under **On Bitmap** or **Off Bitmap** (the On Bitmap is the one that is triggered to display when the bit is ON, the Off Bitmap is triggered to display when the bit is OFF)
6. Click on the box in front of **Allow Stretching**, for the On Bitmap and/or the Off Bitmap if you want the bitmap to stretch to fit the area of the object as you size it on the screen. Choose from the following two options: **Stretch to Fit** or **Maintain Aspect Ratio**.
7. You have three choices for importing a bitmap:
   a. Click on the **Import Bitmap** button and a window will appear allowing you to navigate to the directory/folder where the bitmap file resides. Click on it to highlight and click on the **Open** button. The **File Name** and **Size** of the Bitmap will be displayed. If the Bitmap is too large, you will be asked if you want to resize the image to fit the screen (see message to the left).
   b. You may also click on **Symbol Factory®** to gain access to a library of over 4,000 symbols for industrial automation, including pumps, pipes, valves, tanks, mixers, motors, ducts, electrical symbols, flow meters, material handling, sensors, PLCs, transmitters, and ISA symbols. Once in Symbol Factory, navigate to the symbol you want to import, click on Copy and the symbol is automatically imported into the object.
   c. The third option is to click on **Copy from Clipboard**. This will copy a bitmap you have saved to the clipboard onto the current screen. You can copy a bitmap saved or created in another program onto the system clipboard, and then import it into the current screen.

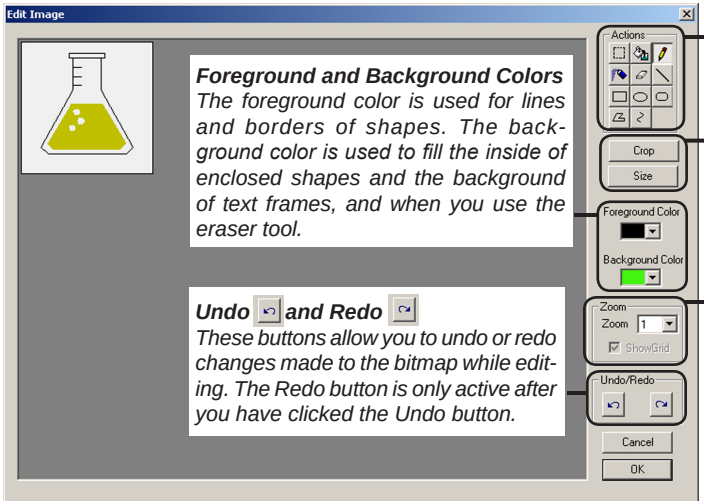


Click on the bitmap to highlight, grab a handle with the cursor and drag to size the object



To Edit a Bitmap

Double click the bitmap on the main screen to access the dialog box. Click the **Edit Image...** button and a window will appear allowing you to edit the bitmap with the following features.



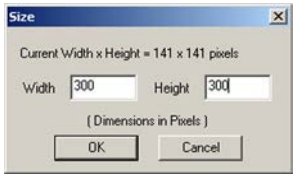
Actions Toolbar
(see page to the right)

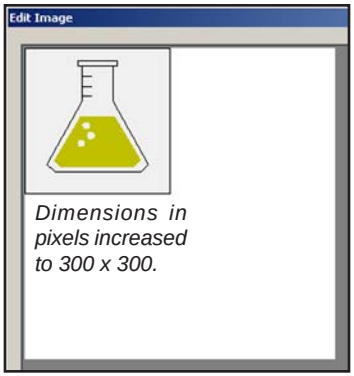
Crop & Size
(see below)

Zoom and ShowGrid
There are 4 levels of zooming into a picture, to show closer detail of pixels within the bitmap. You can add or remove gridlines by checking or clearing the Show Grid check box while in Zoom level 4, as shown below.

Crop
First select an area in which to crop, using the Selection tool. Move or resize the selection, if needed, and click the Crop button. This will remove everything outside the selected area.

Size
Similar to cropping, the size tool allows you to enter exact pixel values. Click the Size button to open the dialog box to the right. Enter a new pixel width and height. The new size is anchored from the top left corner. See examples below.

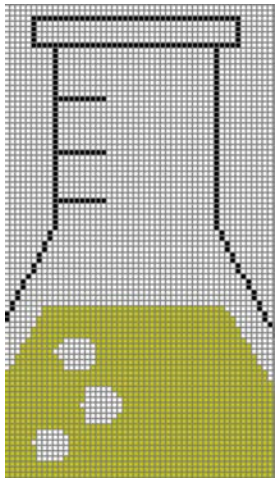




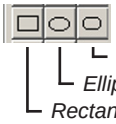
Dimensions in pixels increased to 300 x 300.

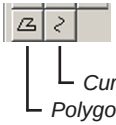
Dimension in pixels decreased to 100 x 100.

Grid at Zoom Level 4
Here is an example of a bitmap as it appears with the ShowGrid feature turned on at Zoom Level 4.



Actions Toolbar





Using the Actions Toolbar:

The Actions Toolbar offers tools you can use to create/edit simple or elaborate drawings. Each tool is described below.

Selection Tool - Drag the pointer to create a selection area. Then click the Crop button, removing everything outside of the selection area.

Paintbucket Tool - Click the area or solid color in the image which you want to fill with the background color. If the shape you want to fill has any breaks in its border, the fill color spreads to the rest of the drawing area.

Pencil Tool - Drag the pointer to free form lines using the foreground color. After dragging a line, left-clicking will start a new line; right-clicking will connect and continue with the same line.

Airbrush Tool - To spray, drag the pointer over the image. The airbrush sprays with the foreground color.

Eraser Tool - Drag the pointer over the area you want to erase.

Line Tool - Drag the pointer to form a straight line, using the foreground color.

Rectangle Tool - Same as the Rounded Rectangle, only with 90 degree angles.

Ellipse Tool - Drag the pointer diagonally in the direction you want to form the ellipse or circle. The foreground color is used to draw the line surrounding the shape, and the background color is used to fill the shape.

Rounded Rectangle Tool - Drag the pointer diagonally in the direction you want to form the rectangle. The foreground color is used to draw the line surrounding the shape, and the background color is used to fill the shape.

Polygon Tool - Drag the pointer to draw a straight line. Click once at each position where you want a new line segment to appear. To finish/close the polygon, either click the exact point where you started the polygon, or click the gray area outside the bitmap area.

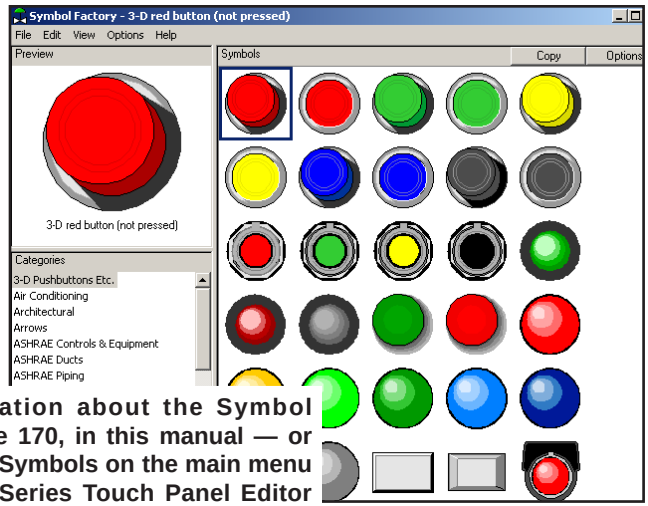
Curve Tool - Draw a straight line by dragging the pointer. Click where you want one arc of the curve to be, and then drag the pointer to adjust the curve. Repeat this step for a second arc. You can only create two curves for each line.

Visibility/Details ***(See Button Object.)***

Simulate Press
Press the **Simulate Press** button to see how the Dynamic Bitmap object will be displayed on the screen when pressed.

OK/Cancel/Help Buttons

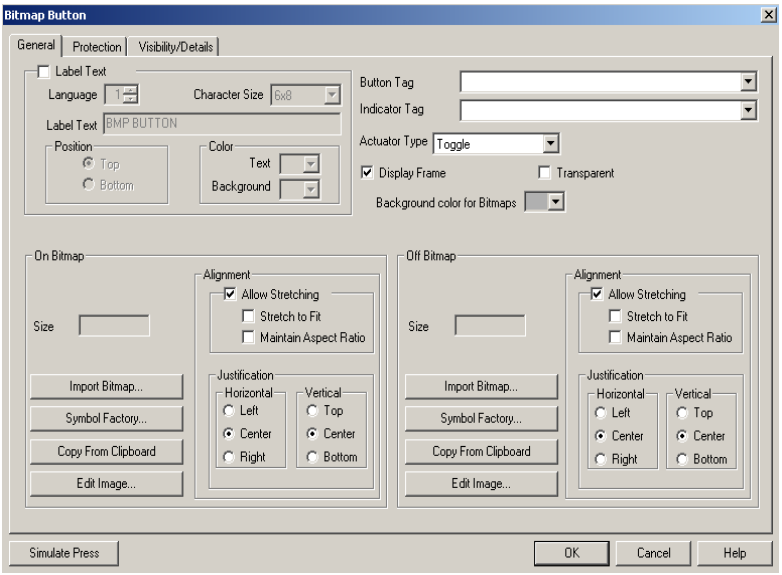
- Click on **OK** button to save your selections, exit the dialog box, and place the object on the screen.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.



For more information about the Symbol Factory®, see page 170, in this manual — or better yet, click on Symbols on the main menu bar within the EZ Series Touch Panel Editor Programming Software and browse through the over 4,000 symbols to see for yourself what is available (and how "EZ" it is) to use in building dynamic EZ Series Touch Panel screens!

Bitmap Button

A **Bitmap Button** is a touch object that combines functions of a button, a Dynamic Bitmap, and an Indicator Light. It allows you to perform a WRITE operation to one bit and a READ operation from a second discrete location. The state of that READ location determines whether the button is displayed in the ON or OFF mode. You



may choose to make the READ and WRITE location the same.

To put a Label on the Bitmap Button, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

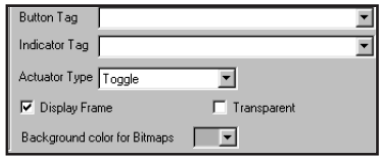
NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

Enter a Tag Names:

1. Enter a **Tag Name** or click on the down arrow and select the Tag Name that you want the Button (tag) and the Indicator (tag) to correspond to.

NOTE: If you select Momentary ON or Momentary OFF, the PLC must set bit to proper state on powerup. This must be done when programming PLC Logic.

2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.
3. Select from the **Actuator Type**. Actuator Type determines



how the tag will be controlled. ***If you have assigned Password Protection for this object and select Momentary On or Momentary Off, the protection feature will not be enabled.***

- **Momentary On** will turn the tag on for as long as you touch the button. (Password Protection is disabled.)
- **Momentary Off** will turn the tag off for as long as you touch the button. (Password Protection is disabled.)
- **Set On** will latch the tag ON.
- **Set Off** will latch the tag OFF.
- **Toggle** will change the state of the tag every time the button is pressed.

4. Select **Background color for Bitmaps.** Click on the down arrow to view the color palette. Select the color for the background of the Bitmap Button.

5. Select whether or not you want to **Display Frame** (selected by default) around the bitmap and whether or not you want the Background to be **Transparent**.

To create On Bitmap and Off Bitmap:

1. Under **On Bitmap** or **Off Bitmap** (the On Bitmap is the one that is triggered to display when the bit is ON, the Off Bitmap is triggered to display when the bit is OFF) .
2. Select the **Alignment** parameters for the bitmap. If you want the bitmap to stretch when the object is sized on the screen, make sure that the box in front of **Allow Stretching** is checked and then select **Stretch to Fit** or **Maintain Aspect Ratio**. Select the **Justification** for the bitmap

within the object.

3. You have three choices for bringing a bitmap into the object, they are:
   a. Click on the **Import Bitmap** button and a window will appear allowing you to navigate to the directory/folder where the bitmap file resides. Click on it to highlight and click on the **Open** button. The **Size** of the Bitmap will be displayed. If the Bitmap is too large, you will be asked if you want to resize the image to fit the screen (see message to the left).

   b. You may also click on **Symbol Factory®** to gain access to a library of over 4,000 symbols for industrial automation, including pumps, pipes, valves, tanks, mixers, motors, ducts, electrical symbols, flow meters, material handling, sensors, PLCs, transmitters, and ISA symbols. Once in Symbol Factory, navigate to the symbol you want to import, click on Copy and the symbol is automatically imported into the object.

   c. The third option is to click on **Copy from Clipboard**. This will copy a bitmap you have saved to the clipboard onto the current screen. You can copy a bitmap saved or created in another program onto the system clipboard, and then import it into the current screen.

To Edit a Bitmap
(See Edit Image... section, page 122.)

Visibility/Details ***(See Button Object.)***

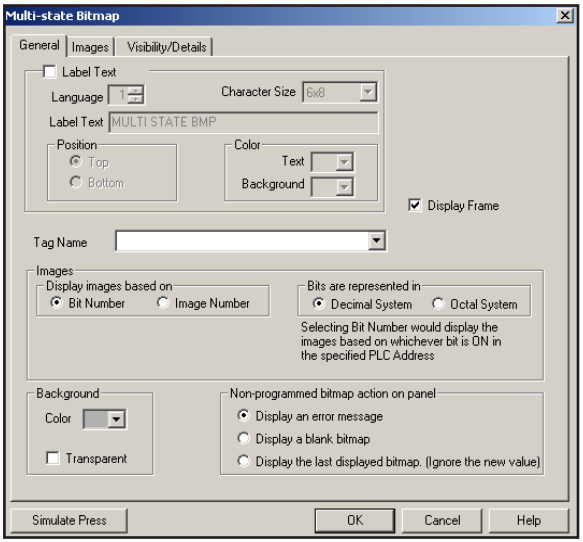
Simulate Press
Press the **Simulate Press** button to see how the Bitmap Button will be displayed on the screen when pressed.

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections, exit the dialog box, and place the object on the screen.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Multi-state Bitmap

Multi-state Bitmap is an object that is created to display images within a frame on the panel screen. Each object has its own programmed images. The object will display one image at a time based on a bit (the one that is set), or a value in the tag. The maximum number of images that can be programmed is based on available memory. Click on the Images tab to program images for the object.

Images stored in the object are numbered based on the Tag Data type (Signed, Unsigned, BCD). If the Value corresponding to the Tag Name is 10, Image Number 10 will be displayed within the



Multi-state Bitmap image frame. Keep in mind that the number of images that you can program are limited by available memory.

NOTE: If you convert images from one to the other type of display (Bit Number, Image Number), you may lose some of the programmed images during the conversion.

To put a Label on the Multi-state Bitmap object, perform the following steps:

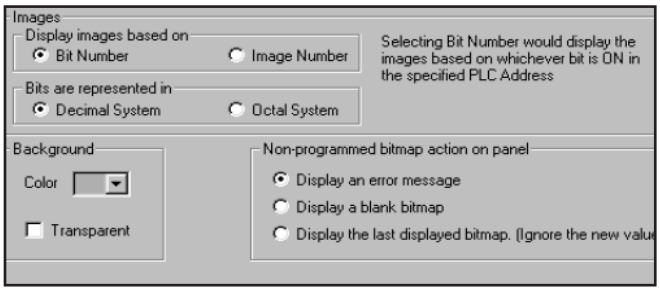
1. Click on the box in front of **Label Text**.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See section on Language, page 198.)
3. Select **Character Size** from the available choices.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.

NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The Edit Tag Details screen will appear.

Display Frame is selected by default. If you do not want the frame around the image to be visible, click on the box to deselect (the box will be empty).

Enter a Tag Name:

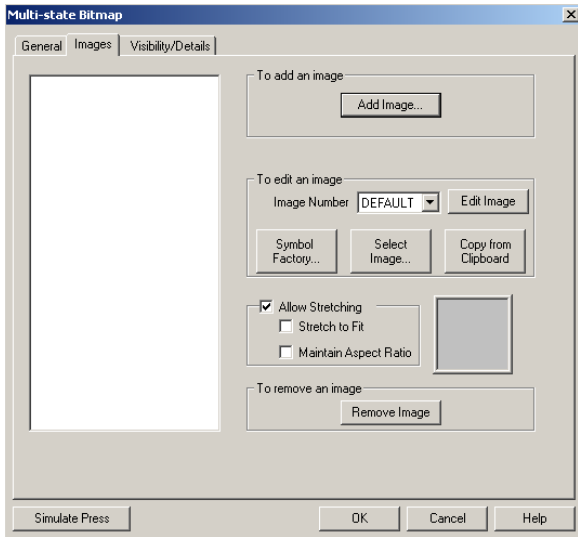
1. Enter a **Tag Name** or click on the down arrow and select the Tag Name from the available choices.
2. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will enter tag details. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC and select the **Data Type** (from available choices). Click on the **OK** button.

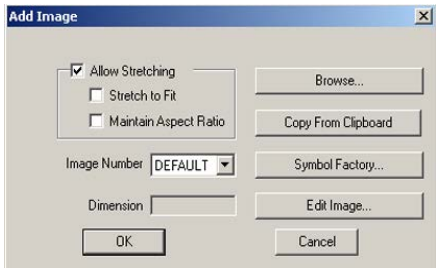


Choose how Images will be displayed and other Image options:

Images can be displayed based on bit (whichever is set), or based on a value in the tag. The maximum number of Images that can be programmed for an object depends on the available memory and/or tag data type.

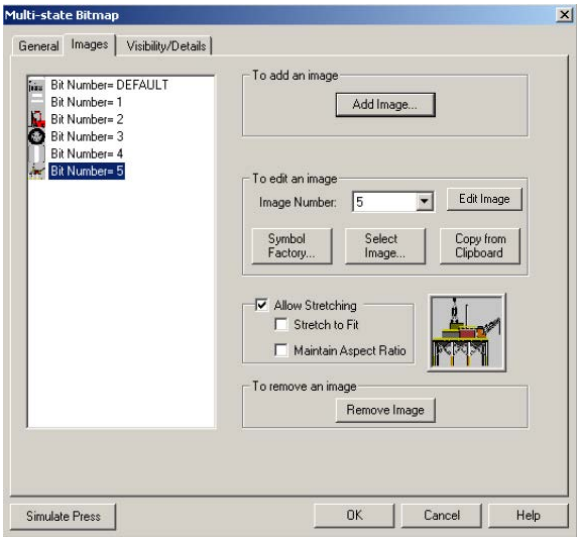
1. Under **Images**, select to **Display images based on Bit Number** or **Image Number.**
2. If you chose **Bit Number**, select either **Bits are represented in Decimal System** or in **Octal System**.
3. Select **Background** Attributes of bitmap**:** This is a local attribute for each Multi-state Bitmap object. Click on the down arrow next to **Color** to select the background color from the available selections.
4. Choose whether or not you want the background to be **Transparent** when it appears on the panel.
5. Next you will choose the **Non-programmed bitmap action on panel**. If a value or a image number is sent to the panel that does not have a valid programmed image associated with it, an error message will display by default (**Display an error message** is selected). You may choose instead to have the panel **Display a blank bitmap**, or **Display the last displayed bitmap (ignore the new value)**.



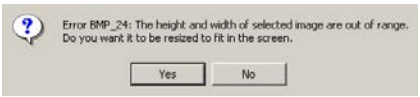


Program Images:
Images programmed to display in the Multi-state Bitmap object are saved in the object's own Image database. To program images, perform the following steps:

1. Click on the **Images** tab, the following dialog box will open.
2. To add an image, click on the **Add Image...** button. The following dialog box will open.
3. Click on the box in front of **Allow Stretching** if you want the bitmap to stretch with the object when sized. Choose how you want the image to stretch from the options **Stretch to Fit**, or **Maintain Aspect Ratio.**
4. Select an **Image Numbe**r. You may program up to 17 (0–15, and the **DEFAULT** image) images for an object. The **DEFAULT** image is displayed when no bits are on.



5. Select from the 3 available options, **Browse...**, **From Clipboard**, or **Symbol Factory...**
   a. If you click on the **Browse** button, a window will appear allowing you to navigate to the directory/folder where the bitmap file resides. Click on it to highlight and click on the **Open** button.
   b. Click on **From Clipboard**. This will copy a bitmap you have saved to the clipboard onto the current screen. You can copy a bitmap saved or created in another program onto the system clipboard, and then import it into the current screen.
   c. You may also click on **Symbol Factory®** to gain access to a library of over 4,000 symbols for industrial automation, including pumps, pipes, valves, tanks, mixers, motors, ducts, electrical symbols, flow meters, material handling, sensors, PLCs, transmitters, and ISA symbols. Once in Symbol Factory, navigate to the symbol you want to import, click on Copy and the symbol is automatically imported into the object.



6. The size of the bitmap you have selected will appear in the field next to **Dimensions**. If the Bitmap is too large, you will be asked if you want to resize the image to fit the screen (see message to the left).

7. Click on **Yes** to resize or **No** to leave as is.

8. To edit an image, click on the **Image** in the list to highlight it. The number of the image will appear in the **Image Number** field. A thumbnail view of the image will also appear as shown in the example below.
9. You may then click on the **Symbol Factory**, **Select Image**, or **Copy from Clipboard** buttons to select or import another bitmap.

10. To delete an image from the list, click on it to highlight, and then click on the **Remove Image** button.

11. Click on **OK** to save or **Cancel** to close window without saving.

To Edit a Bitmap
(See Edit Image... section, page 122.)

Visibility/Details ***(See Button Object.)***

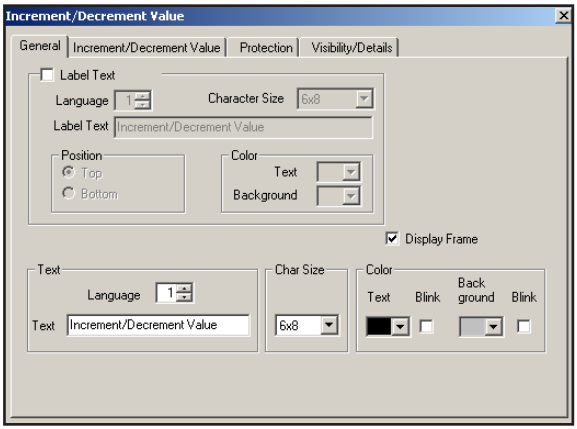
Simulate Press
Press the **Simulate Press** button to see how the Multi-state Bitmap object will be displayed on the screen when pressed.

OK/Cancel/Help Buttons
- Click on **OK** button to save your selections, exit the dialog box, and place the object on the screen.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

Place Multi-state Bitmap object on the screen and size it.
- To size the object, select it, grab a handle and drag to the size you want.
- To move the object, select it, click and hold left mouse button, and drag to where you want it to appear on the screen.

Increment/Decrement Value Object

The **Increment/Decrement Value Object** allows you to configure a button, that when pressed, will Add or Subtract from a value using two tags and a programmed value. You will be able to Read a value in the first tag and then Write to another using the value you have programmed to increment or decrement that register value.



To put a Label on the Increment/Decrement Value object, perform the following steps:

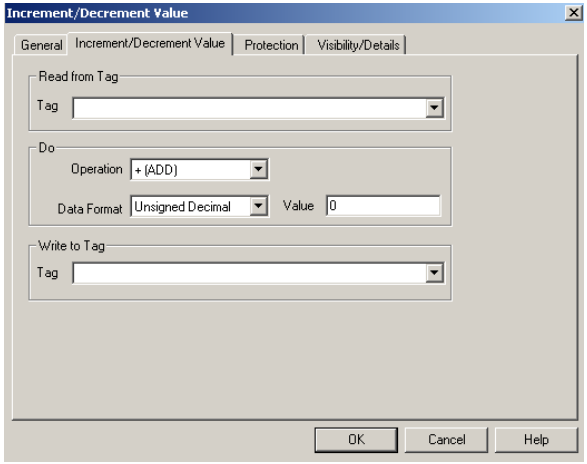
1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available sizes.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the object to be visible, click on the box to deselect (the box will be empty).

Enter Text:

Here you will enter the Text that will appear within the touch object, and control how that text will appear.

1. Select the **Language** number (1–9) for the **Text**.
2. Type in what you want to appear within the button.
3. Select **Character Size** from the available choices.
4. Select the **Color** of the **Text** and the **Color** of the **Background**.

5. If you want the **Text** or the **Background** to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.



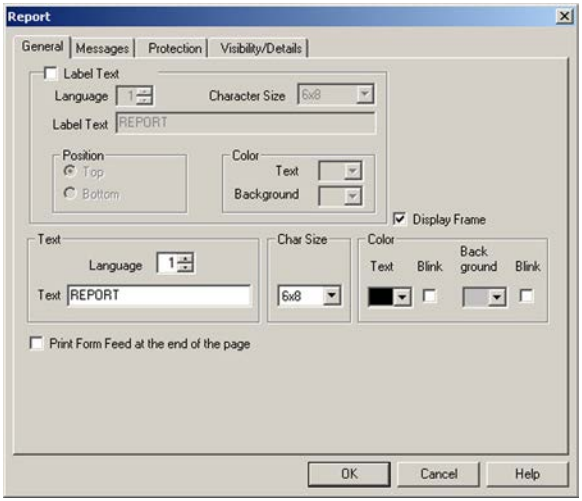
NOTE: To edit the Address String, with your cursor in the Tag Name field, click on the right mouse button. The EDIT TAG DETAILS screen will appear.

To program the increment/decrement operation:

1. Click on the **Increment/Decrement Value** tab.
2. Enter a **Read from Tag** or click on the down arrow and select the Tag Name that you want the button to correspond to.
3. If the Tag Name is new, the **Add New Tag Details** dialog box will appear where you will map the tag. The **Tag Name** will appear in the first field. Enter an **Address String** appropriate for your type PLC. Click on the **OK** button.
4. Under **Do**, click on the down arrow next to the **Operation** field and select **+ (ADD)** or **– (SUBTRACT)**. Select **+ (ADD)** if you want to increment a register value, or select **– (SUBTRACT)** if you want to decrement a value.
5. Select your **Data Format** (type) from the available choices (Signed Decimal, Unsigned Decimal, Octal, Hex, BCD, or Floating Point).
6. Enter the **Value**. This value will be either added to or subtracted from (depending on which operation you have chosen) the destination tag, each time you press the INC/DEC Value object button.
7. Select or enter the **Write to Tag**. (The **Write to Tag** may be the same as the **Read from Tag**.)

Report Object

The **Report Object** allows you to configure a button that, when pressed, will send a report to a printer.



To put a Label on the Report, perform the following steps:

1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available sizes.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the object to be visible, click on the box to deselect (the box will be empty).

Enter Text:

Here you will enter the Text that will appear within the touch object, and control how that text will appear.

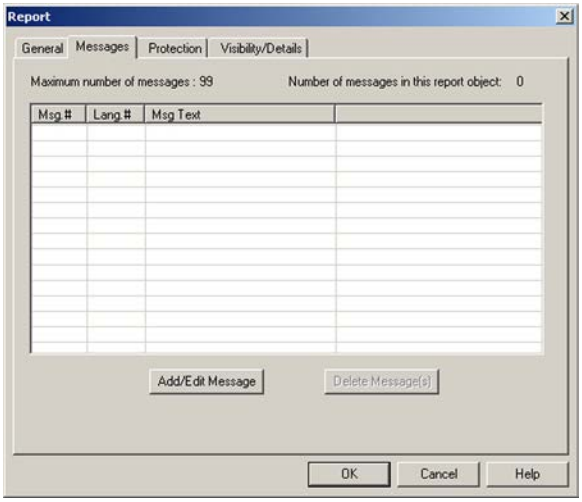
1. Select the **Language** number (1–9) for the **Text**.
2. Type in what you want to appear within the button.
3. Select **Character Size** from the available choices.
4. Select the **Color** of the **Text** and the **Color** of the **Background**.
5. If you want the **Text** or the **Background** to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.

Print Selections:

Decide how you want the Report to print. Click in the box in front of Print Form Feed at the end of the page, if you want the form feed to print at the end of each page.

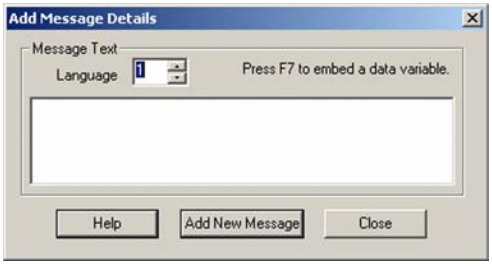
Report Messages:

1. Click on the **Messages tab** to view the following dialog.



2. From this dialog box you can see the **Maximum number of Messages** (99, limited by memory) and the number of messages you have programmed for this report object **(Number of messages in this report object)**. A list of programmed Messages is displayed showing the Message Number, Language Number, and Message Text.

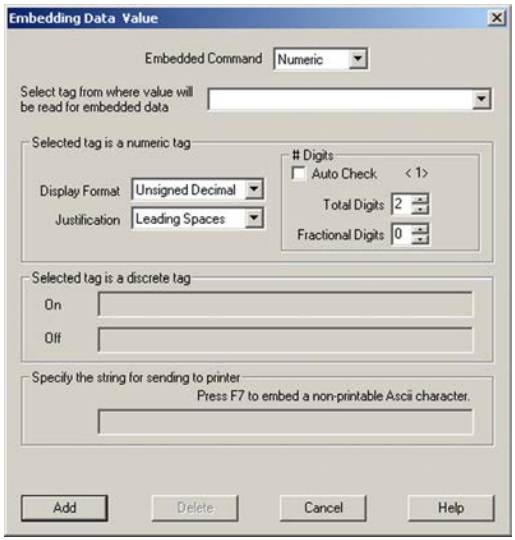
3. To add a message, click on the **Add/Edit Message** button. The following window will appear.



4. Select the **Language** Number (1-9).

5. Enter the **Message Text** (up to 200 characters) for the message you are creating, or edit the text of the Message Number you have selected previously.

6. Press the **F7** function key on your keyboard to **embed a data value** within the message. The following dialog box will appear.



7. Special characters in the message determine where the embedded data from the registers should go. Up to four data values may be embedded in a single message. Program how the data value will be displayed as follows:

   a. Select the **Embedded Command** that determines the type of value to embed. Available choices are **Discrete, Numeric, String, Printer or Slave.** Depending on what type command you choose, certain areas of the dialog box become available or unavailable (grayed out) for selection or data entry.

   b. If you choose **Discrete**, **Numeric**, or **String**, select or enter the Tag name where the data value will be read by clicking in the field or on the down arrow next to **Select tag from where value will be read for embedded data**.

c. If you have selected **Numeric**, the options under **Selected tag is numeric tag** will be enabled.

d. Select the **Display Format** from the available choices.

e. Select **Justification** from **Leading Zeroes, Leading Spaces**, or **Trailing Spaces**.

f. Under **# Digits**, click on the box in front of **Auto Size** if you want to have the panel automatically determine the number of digits to be placed for the embedded value. **Total Digits** and **Fractional Digits** will be disabled if you choose **Auto Size**.

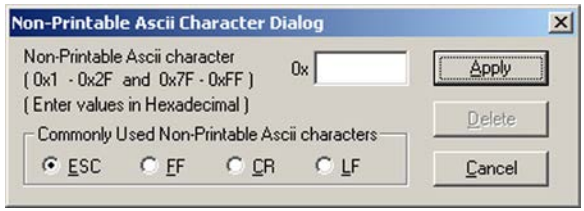
g. Also, under **# Digits**, you may enter the **Total Digits** that you want to display, and enter the **Factional Digits** you want to display (leave at default, 0, if you do not want fractional digits).

h. If you have selected **Discrete**, the fields under **Selected tag is a discrete tag**, will be available. Enter the text that you want to appear within the message when the Discrete register in **ON** and when the Discrete register if **OFF**.

i. If you have selected **Printer** under **Embedded Command**, the field, **slave**, will be available.

j. Enter the ASCII string that you want to send to the printer.

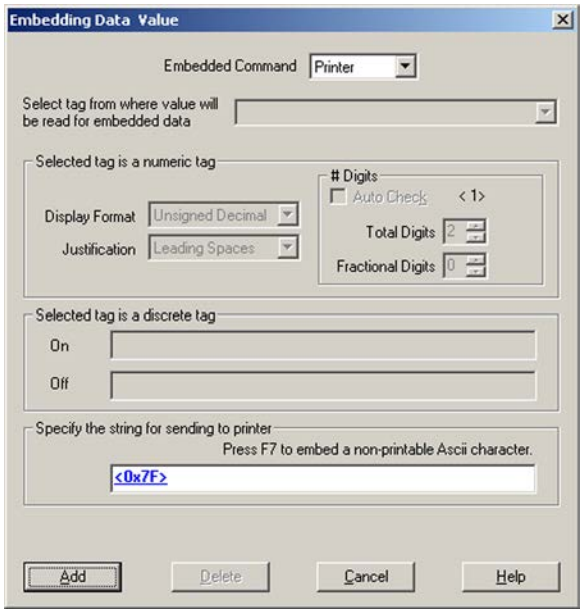
k. To embed a **non-printable ASCII character**, click in the field where you want it to appear and press F7. The following dialog box will appear.



l. Enter values in Hexadecimal in field next to **0x**, or you may click in front of **ESC** (for escape), **FF** (form feed), **CR** (carriage return), or **LF** (line feed) to embed these commonly used printer commands.

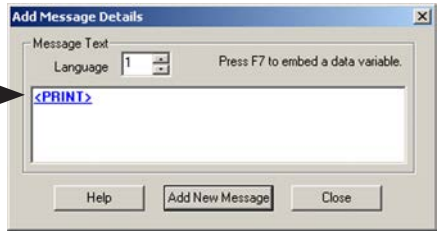
m. Click on **Apply** to enter your selections. You will exit the **Non-Printable ASCII Character** dialog and return to the **Embedding Data Value** dialog.

n. The ASCII characters will appear in blue, and underlined, in the printer string field (example show below.)

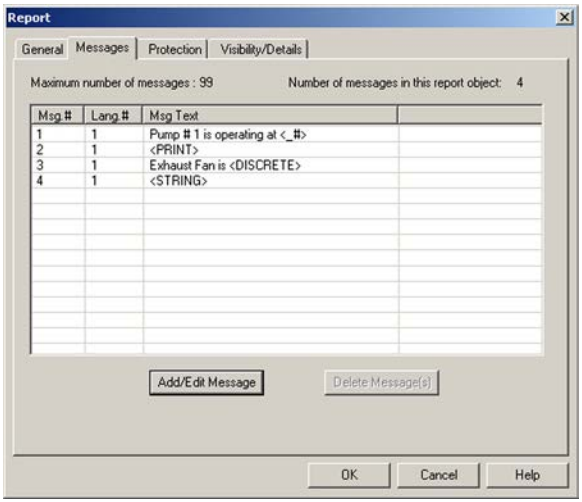


o. Press the **Add** button to add the embedded data to the message. You will return to the **Add New Message** dialog. When inserted in a message, each **Embedded Data Value** will be represented in blue, and underlined, as shown below.

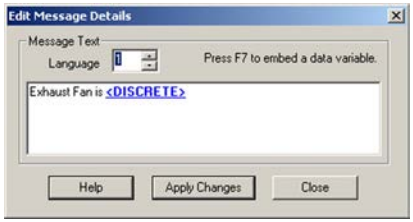
This example shows how an embedded printer command will be represented in a message



8. You may continue to add messages or click on the **Close** button to return to the **Messages** tab dialog. Your programmed messages will display in the list as shown below.



9. To edit an existing message, click on it in the list to highlight it and then click on the **Add/Edit Message** button. The **Edit Message Details** dialog will appear. Make your changes and click on the **Apply Changes** button when finished.



Protection ***(See Button Object)***

Visibility/Details ***(See Button Object)***

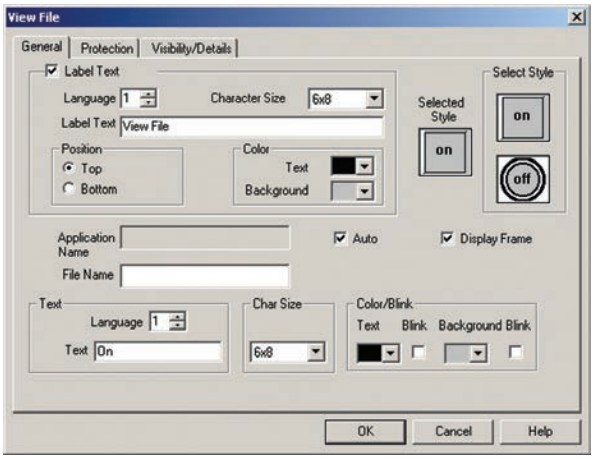
OK/Cancel/Help Buttons

- Click on **OK** button to save your selections and exit the dialog box.
- Click on **Cancel** button to exit the dialog box without saving your selections.
- Click on **Help** button to go to the Help Topic for that dialog box.

View File Object

The **View File Object** allows you to configure a button, that when pressed, will launch a Windows CE File Viewer to view a Windows file. The File Viewer/application launched is determined either automatically by the extension of the file name (e.g. a .doc file will launch Word Viewer, a .pdf file will launch PDF Viewer, etc.), or manually by entering the path of where the .exe file for the preferred application resides.

NOTE: The View File Object is only available for CE units, i.e. EZCE Touchpanel, as it allows an operator to launch Windows files from the HMI application.



To put a Label on the View File object, perform the following steps:

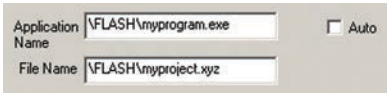
1. Click on the box in front of **Label Text** if you want a label for your object.
2. Use the UP/DOWN arrows after the **Language** box to select a language number. (See Language section, page 198.)
3. Select **Character Size** from the available sizes.
4. Enter **Label Text** up to 40 characters.
5. Select the **Position** of the label, whether you want it to appear at the **Top** or the **Bottom** of the object frame.
6. Select the **Text** and **Background Color**. Click on the down arrow to view the color palette.
7. **Display Frame** is selected by default. If you do not want the frame around the object to be visible, click on the box to deselect (the box will be empty).

Enter Text:

Here you will enter the Text that will appear within the touch object, and control how that text will appear.

1. Select the **Language** number (1–9) for the **Text**.
2. Type in what you want to appear within the button.

3. Select **Character Size** from the available choices.
4. Select the **Color** of the **Text** and the **Color** of the **Background**.
5. If you want the **Text** or the **Background** to **Blink**, click on the box below **Blink** to place a check mark indicating that the option is enabled.



Enter an Application and File name

In the **Application Name** field, please enter the name of the application including its path that would open the file. If you are using one of the File Viewer applications included with the Windows CE OS, and the file has an associated extension (.doc, .xls, .pdf, etc.) you may choose Auto and need not enter the Application name.

In the **File Name** field, enter the path where the file is saved that you want to open.

Auto Feature

Click the box next to **Auto** if you are planning to open a file supported by one of Windows CE File Viewers. This feature will launch the application that is associated with the file name's extension. (See table below for supported documents.)

As shown in the example above, the File Viewer "PDF Viewer" will launch, because it is associated with the file extension.

File Viewer:	Supports documents authored in the following formats:
Word Viewer or WordPad	Microsoft Word 97, Word 2000, and Word XP
Excel Viewer	Microsoft Excel 97, Excel 2000, and Excel XP
PowerPoint Viewer	Microsoft PowerPoint 97, PowerPoint 2000, and PowerPoint XP
PDF Viewer	Adobe Acrobat PDF (Portable Document Format) version 1.3
Image Viewer	.gif, .bmp and .jpeg image files
Media Player	.mpg video files

Unicode Text

NOTE: Unicode is not a font; rather it is a character encoding system and can be used to create multilingual text including technical symbols and punctuations using a Unicode-compliant text editor. For more information, please refer to Unicode Consortium. www.unicode.org

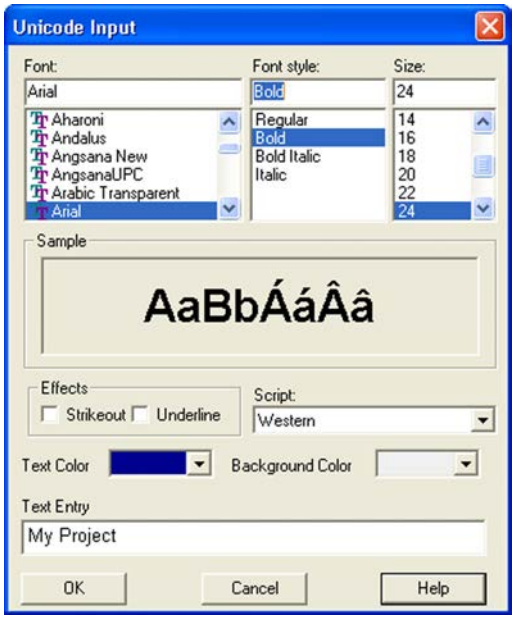
The **Unicode Text** object allows you to place static text using any font/script (e.g. Chinese) available on your PC.

In order to enter text for South Asian languages (Thai, Vietnamese, Arabic etc requiring Cyrillic alphabet or right-to-left script) and Indic languages (Hindi, Tamil etc) you might need to install additional support on your PC. For entering text in East Asian languages (Chinese, Japanese etc) using U.S. keyboard you might need to install an additional Input Method Editor (IME)

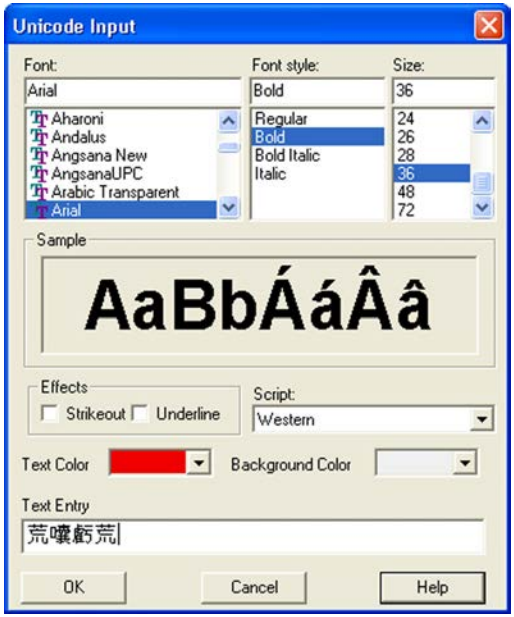
Why use Unicode Text object vs. Static Text object?

Static Text object allows the user to display static text on a screen in only one custom font for EZ Series Touch Panels with pre-set sizes of 6x8, 8x16, 8x32 etc.

Whereas with **Unicode Text** object, users can use any font in any size already installed on the user's PC. Unicode Text object also allows the user to enter static text in any supported International Language including complex script (e.g. Chinese) and right-to-left languages (Thai, Arabic etc).



Since this object supports Unicode text, you can choose any font and size installed on your PC.



Select the desired Font, Style, Size, Text Color, Background Color, or Effects and click “OK”.

Choosing International Languages

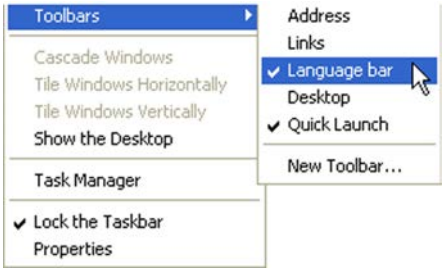
Unicode Text Object not only allows you to use different fonts on your computer, but also allows you to use International Scripts for complex languages like Chinese, Thai etc and display text in your specified language on the screen.

NOTE: For information on how to enable support for different languages, please contact Tech Support at 1-877-774-3279 or visit Microsoft.com.

In order to take advantage of international scripts, you will first need to enable support for the corresponding language in your OS.

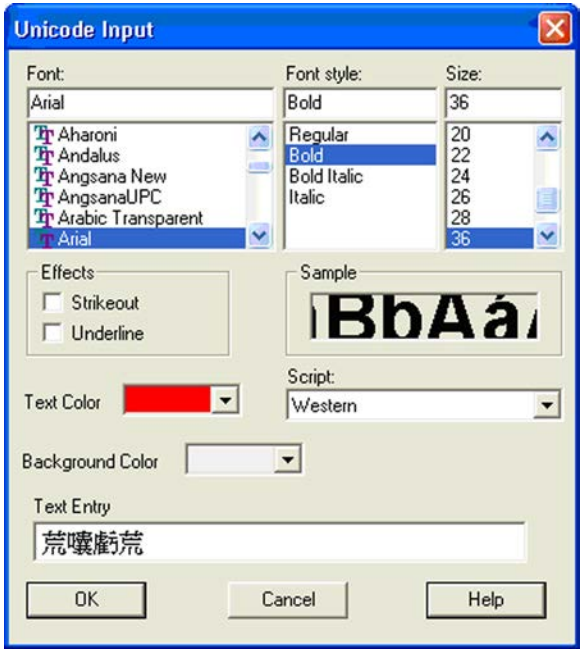
Once you have the required support installed on your computer, EN will appear on your task bar. You must have the language bar turned on before you can see the language button.

Right click on your Windows taskbar and select Language bar through the Toolbars menu.



Using this button you can change the input language to the specified language already installed on your computer by clicking on it.

Once you have selected your desired language from the language button, now you can display static text in your specified language.



Click “OK” and then click on the programming screen where you want your Unicode Text to appear.

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Similarly you can use any International Language installed on your computer to create screens in multiple languages using the procedure as above.

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Unicode Indicator Light

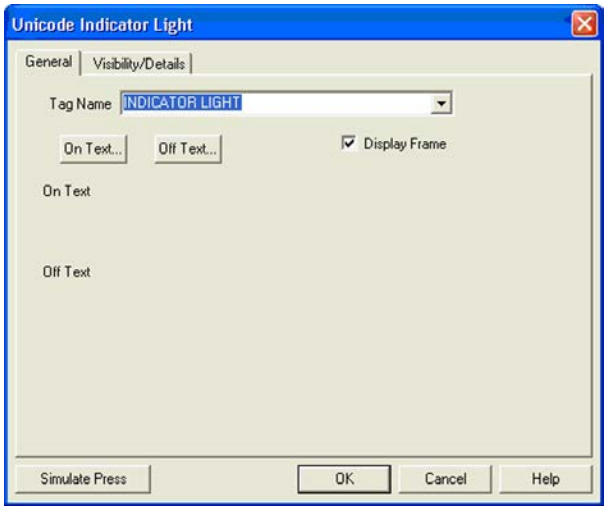
A **Unicode Indicator Light** Object allows you to monitor and display the state of a bit. It reads the associated bit information and can produce appropriate display text using any font / script (e.g. Chinese) available on your PC. For example, this object could display the status of a bit linked to a push button.

In order to enter text for South Asian languages (Thai, Vietnamese, Arabic etc requiring Cyrillic alphabet or right-to-left script) and Indic languages (Hindi, Tamil etc) you might need to install additional support on your PC. For entering text in East Asian languages (Chinese, Japanese etc) using U.S. keyboard you might need to install an additional Input Method Editor (IME)

Why use Unicode Indicator Light vs. Indicator Light object?

Both Unicode Indicator Light and Indicator Light objects display the status of a bit and produce appropriate display text for it. However the Indicator Light object allows the user to display text in only one custom font for EZ Series panels with pre-set sizes of 6x8, 8x16, 8x32 etc.

Whereas with Unicode Indicator Light object, users can use any font in any size already installed on the user's PC. This object also allows the user to enter text in any supported International Language including complex script (e.g. Chinese) and right-to-left languages (Thai, Arabic etc).



Unicode Indicator Button

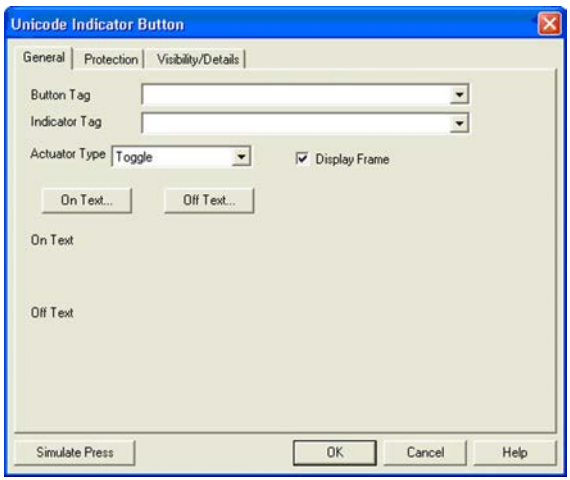
A **Unicode Indicator Button** combines a regular button with a pilot light. It allows you to perform a WRITE operation to one bit and a READ to a second discrete location. The state of that READ location determines whether the button is displayed in the ON or OFF mode with the option of display text on screen in any font / script (e.g. Chinese) installed on your computer. You may choose to make the READ and WRITE location the same.

In order to enter text for South Asian languages (Thai, Vietnamese, Arabic etc requiring Cyrillic alphabet or right-to-left script) and Indic languages (Hindi, Tamil etc) you might need to install additional support on your PC. For entering text in East Asian languages (Chinese, Japanese etc) using U.S. keyboard you might need to install an additional Input Method Editor (IME)

Why use Unicode Indicator Button vs. Indicator Light Button?

Both Unicode Indicator Button and Indicator Button objects can perform WRITE operation to one bit and a READ to a second discrete location while displaying the status of the button with appropriate display text for it. However the Indicator Button object allows the user to display text in only one custom font for EZ Series panels with pre-set sizes of 6x8, 8x16, 8x32 etc.

Whereas with Unicode Indicator Button object, users can use any font in any size already installed on the user's PC. This object also allows the user to enter text in any supported International Language including complex script (e.g. Chinese) and right-to-left languages (Thai, Arabic etc).

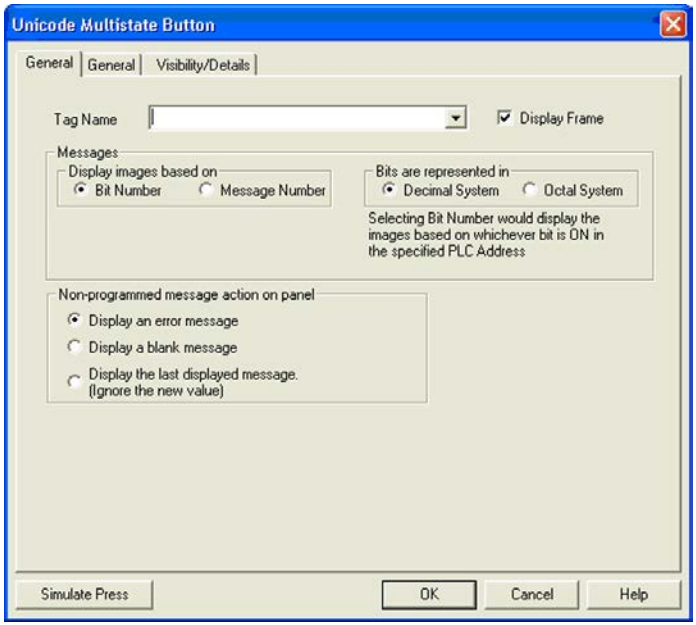


Unicode Multi-state Indicator

Unicode Multi-state Indicator is an object that is created to display preprogrammed messages using any font / script (e.g. Chinese) available on your PC within a frame on the EZ Series Touch Panel screen. Each object has preprogrammed messages that are stored in the object itself. In other words, Messages are stored in the object, NOT the Message Database. (The Message Database is used by the Lookup Text Object only.) It displays one message at a time based on a bit (the one that is set), or a value in the tag. The maximum number of messages that can be programmed is 255. Click on the Messages tab to program messages in the database.

Messages designed in the Database are numbered based on the tag data type. If the Value corresponding to the Tag Name is 10, Message Number 10 will be displayed within the Unicode Multi-state Indicator Text Frame.

In order to enter text for South Asian languages (Thai, Vietnamese, Arabic etc requiring Cyrillic alphabet or right-to-left script) and Indic languages (Hindi, Tamil etc) you might need to install additional support on your PC. For entering text in East Asian languages (Chinese, Japanese etc) using U.S. keyboard you might need to install an additional Input Method Editor (IME)



Why use Unicode Multi-state Indicator vs. Multi-state Indicator?

Both Unicode Multi-state Indicator and Multi-state Indicator objects can display pre-programmed multiple messages based on the value of a tag or state of a bit. However Multi-state Indicator object only allows the user to display text in only one custom font for EZ Series Touch Panels with pre-set sizes of 6x8, 8x16, 8x32 etc.

Whereas with Unicode Multi-state Indicator object, users can use any font in any size already installed on the user's PC. This object also allows the user to enter text in any supported International Language including complex script (e.g. Chinese) and right-to-left languages (Thai, Arabic etc).

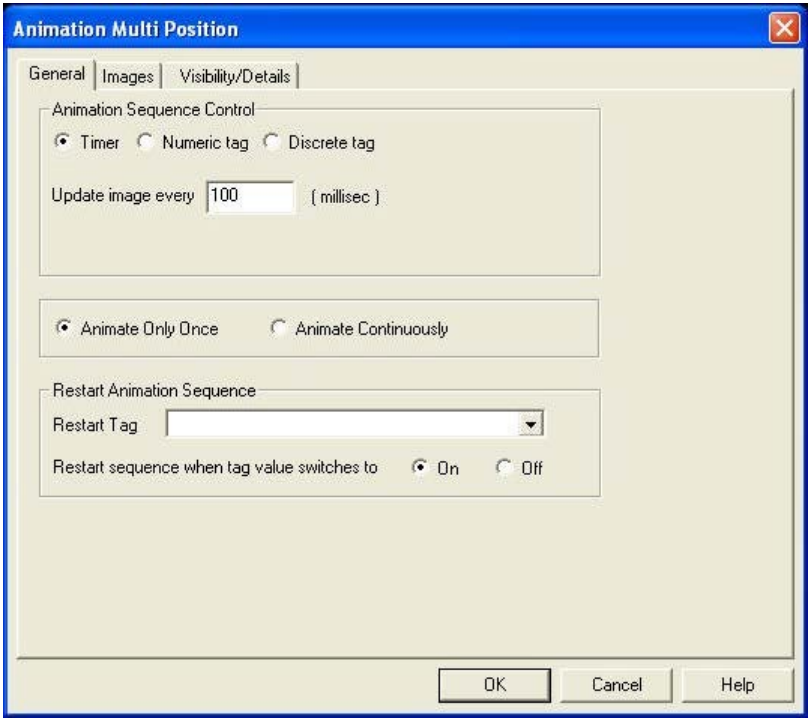
Single Position Animation

Single position animation allows you to display a sequence of images at a fixed location on the screen. The images in the animation can be updated either periodically (using a timed interval), using a numeric tag, or when a discrete tag changes state.

General Tab

The General tab in the Single Position Animation object dialog allows you to configure the following:

- the label on the animation object
- the background of the animation object
- how and when the animation is triggered (animation sequence control)
- whether the animation happens only once or continuously (loop control)
- when to restart the animation sequence (restart animation sequence)



To put a label on a single location animation object, perform the following steps:
1. Click on the box in front of Label Text if you want a label for your object.
2. Use the UP/DOWN arrows after the Language box to select a language number. (See language section for details)
3. Select Character Size from the available choices.
4. Enter Label Text up to 40 characters.
5. Select the Position of the label, whether you want it to appear at the Top or the Bottom of the object frame.
6. Select the Text and Background Color. Click on the down arrow to view the color palette.
7. Display Frame is selected by default. If you do not want the frame around the animation object to be visible, click on the box to deselect (the box will be empty).

Specifying Background
The background of the animation object can be either transparent or have a certain color. To set a background color, click on the radio button labeled “Color” and choose a color. To set a transparent background, click on the radio button labeled “Transparent”. (The object is drawn in a rectangle that may be larger than some of the images. The area between the image and bounding rectangle is considered as “background” here).

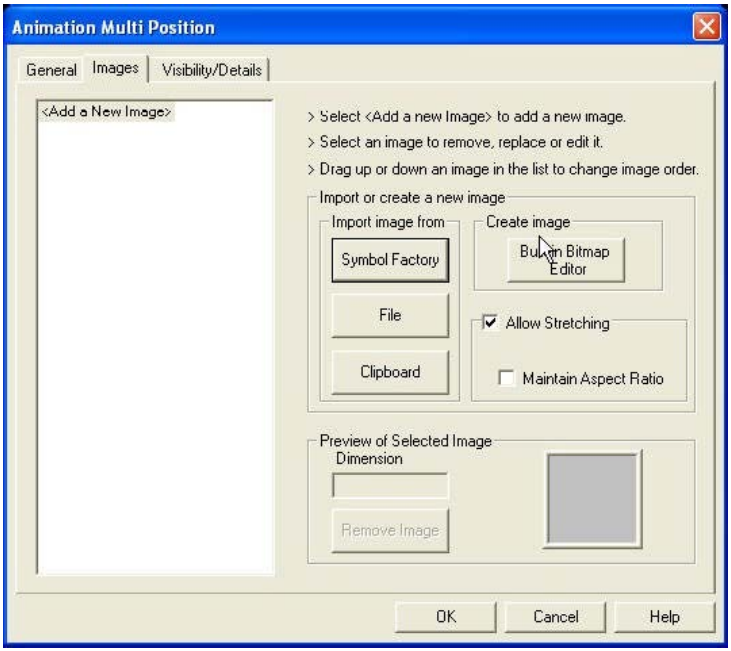
Specifying Animation Sequence Control:
The animation sequence control option allows you to specify when and how to trigger the animation of the images. There are three possible choices:
1. Timer: When this option is selected, each image in the animation will be displayed for a specified time interval. The time interval (in milliseconds) is specified in the textbox. When the time interval is up, the next image in the sequence (as specified by the image number in the images tab) is displayed.
2. Numeric Tag: When this option is selected, the image displayed is controlled by the value of numeric tag. The value of the tag determines the image number to be displayed. For example, suppose you have an animation object with a total of 3 images (with image numbers 0, 1 and 2). The first image (image #0) will be displayed when the value of the numeric tag is 0, the second image (image #1) will be displayed when the value of the numeric tag is 1, and the final image (image #2) will be displayed when the value of the numeric tag is 2. If the tag value is anything other than 0, 1 or 2, the previous image that was displayed will continue to be displayed.
3. Discrete Tag: When this option is selected, the next image in the animation sequence is displayed when the discrete tag value transitions to the discrete state specified. For example, assume that you have an animation object with a total of 3 images and the “Update image when tag value switches to” option is set to on. The animation object would initially display the first image in the animation sequence (image #0). The next image in the sequence (image #1) would be displayed the next time the discrete tag transitions from off to on. Similarly, the third and final image in the sequence (image #2) would be displayed when the animation object is currently displaying the second image and the discrete tag value transitions from off to on.

Specifying loop control:
Loop control allows you to specify whether you want the animation sequence to occur continuously or just once. If you want the animation to happen only once, click on the radio button labeled “Animate Only Once”. For continuous animation, click on the radio button

labeled “Animate Continuously”. Note that loop control is only applicable if animation sequence control is determined by a timer or a discrete tag.

Specifying Restart Animation Sequence:
The Restart Animation Sequence option allows you to restart an animation from the beginning based on the value of discrete tag. This option only applies to animation object whose sequence control is determined by a timer or a discrete tag. To specify this option, perform the following steps:
1. Enter the Restart Tag name or click on the down arrow and select the tag from the available choices. If the tag name is new, the Add New Tag Details dialog box will appear where you will enter tag details. The Tag Name will appear in the first field. Enter an Address String appropriate for your PLC type and select the Data Type (from available choices). Click on the OK button.
2. Select when you want to restart the animation. Selecting ‘On’ will cause the animation object to reset the image index to the first image (image #0) and restart the animation when the tag value transitions from off to on. Similarly, selecting ‘Off’ will cause the animation object to restart the animation when the tag value transitions from on to off.

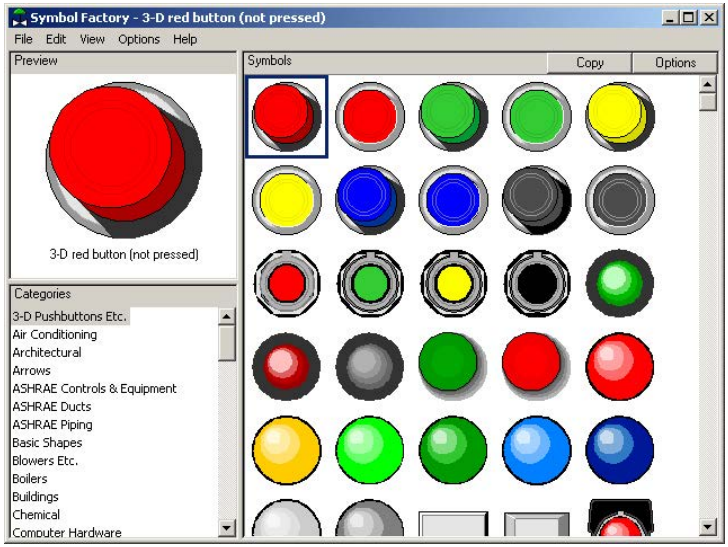
Images Tab
The images tab allows you to add images that are required for the animation object. Each image is automatically assigned an increasing index number. The index number determines the sequence of display of images in case of timed or discrete animation control. For example, in an animation with three images, image #0 is the first image in the animation, image #1 is the second image in the animation and image #2 is the final image in the animation. To add an image, click on “<Add a New Image>” and then either create image using the built-in image editor, or choose from one of the imae sources. To edit an included image, select the image, and use built-in editor to modify the image, or use one of the image source to replace the image.



To add a new image, perform the following steps:

1. Click the item labeled <Add a New Image> in the image list
2. Choose from one of the following options:

a. To use an image from the symbol factory, click on the button labeled “Symbol Factory”. Select the desired symbol and then close symbol factory.



b. To use an existing image, click on the button labeled “File”. Locate the image using the file browser and click OK.

c. To copy an image from the clipboard, click on the button labeled “Clipboard”. Note that this button will be disabled if there are no images in the clipboard.

d. To create an image from scratch, click on the button labeled “Built-in bitmap Editor” (under the group box titled “Create Image”). Use the bitmap editor to create the new image and then click OK.

3. The newly added image will show up in the image list. Each image is automatically assigned the next available integer (starting with 0). Dragging and dropping the image to its appropriate location in the image list will modify the image number that is associated with the image (and hence change its position in the animation sequence).

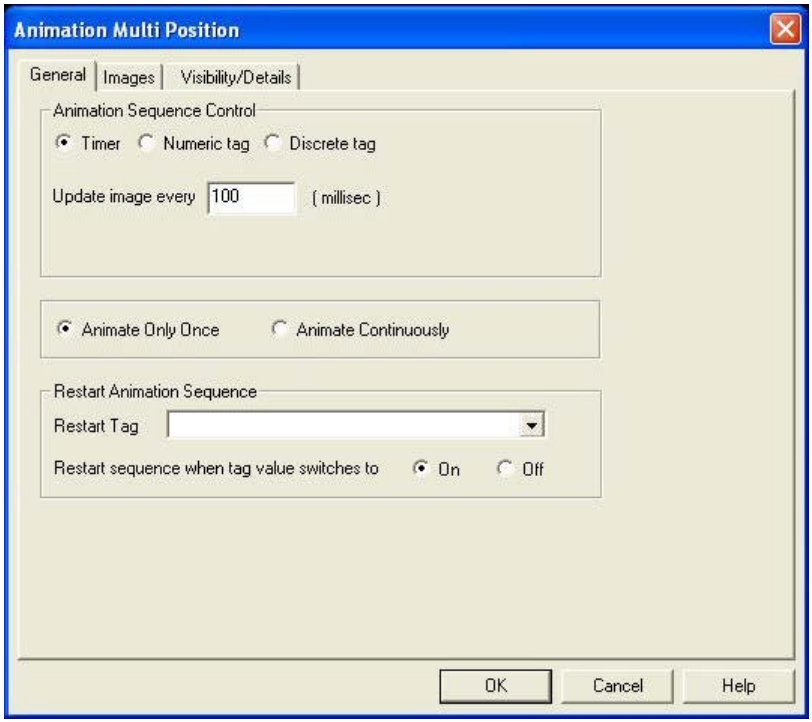
To replace an existing image in the image list, perform the following steps:
1. Click on the image you want to replace on the images list.
2. Choose from one of the following options:
a. To replace the selected image with an image from the symbol factory, click on the button labeled “Symbol Factory”. Choose the desired symbol and then close the symbol factory. b. To replace the selected image with an existing image, click on the button labeled “File”. Use the file browser to locate the image and click OK.
c. To replace the selected image with an image from the clipboard, click on the button labeled “Clipboard”. Note that this button will be disabled if there are no images in the clipboard.
d. To edit an existing image, click on the button labeled “Built-in bitmap Editor” (under the group box titled “Edit Image”). This will open up the selected image in the bitmap editor. Make the necessary modifications and click OK.

To remove an existing image in the image list, perform the following steps:
1. Click on the image you want to remove.
2. Click on the button labeled “Remove Image” (under the group box labeled “Preview of Selected Image”).

MultiPosition Animation

Multi position animation allows you to display a sequence of images at different locations on the screen. The images in the animation can be updated either periodically (using a timed interval), using a numeric tag, or when a discrete tag changes state. General Tab The General tab in the Multi Position Animation object dialog allows you to configure the following:

- how and when the animation is triggered (animation sequence control)
- whether the animation happens only once or continuously (loop control)
- when to restart the animation sequence (restart animation sequence)



Specifying Animation Sequence Control:
The animation sequence control option allows you to specify when and how to trigger the animation of the images. There are three possible choices:
1. Timer: When this option is selected, each image in the animation will be displayed for a specified time interval. The time interval (in milliseconds) is specified in the textbox. When the time interval is up, the next image in the sequence (as specified by the image number in the images tab) is displayed.

2. Numeric Tag:
When this option is selected, the image displayed is controlled by the value of numeric tag. The value of the tag determines the image number to be displayed. . For example, suppose you have an animation object with a total of 3 images (with image numbers 0, 1 and 2). The first image (image #0) will be displayed when the value of the numeric tag is 0, the second image (image #1) will be displayed when the value of the numeric tag is 1, and the final image (image #2) will be displayed when the value of the numeric tag is 2. If the tag value is anything other than 0, 1 or 2, the previous image that was displayed will continue to be displayed.

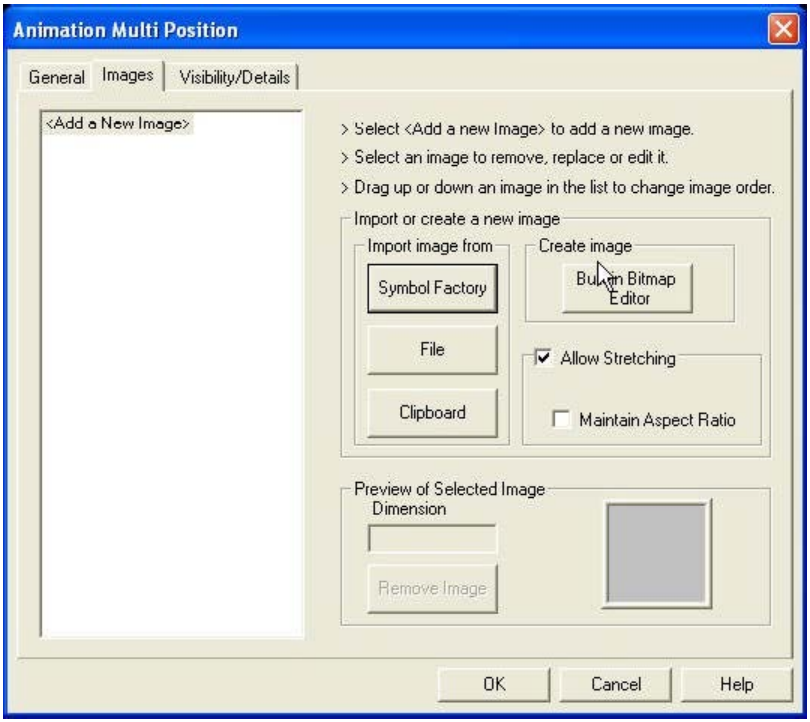
3. Discrete Tag:
When this option is selected, the next image in the animation sequence is displayed when the discrete tag value transitions to the discrete state specified. For example, assume that you have an animation object with a total of 3 images and the “Update image when tag value switches to” option is set to on. The animation object would initially display the first image in the animation sequence (image #0). The next image in the sequence (image #1) would be displayed the next time the discrete tag transitions from off to on. Similarly, the third and final image in the sequence (image #2) would be displayed when the animation object is currently displaying the second image and the discrete tag value transitions from off to on.

Specifying loop control:
Loop control allows you to specify whether you want the animation sequence to occur continuously or just once. If you want the animation to happen only once, click on the radio button labeled “Animate Only Once”. For continuous animation, click on the radio button labeled “Animate Continuously”. Note that loop control is only applicable if animation sequence control is determined by a timer or a discrete tag.

Specifying Restart Animation Sequence:
The Restart Animation Sequence option allows you to restart an animation from the beginning based on the value of discrete tag. This option only applies to animation object whose sequence control is determined by a timer or a discrete tag. To specify this option, perform the following steps:
1. Enter the Restart Tag name or click on the down arrow and select the tag from the available choices. If the tag name is new, the Add New Tag Details dialog box will appear where you will enter tag details. The Tag Name will appear in the first field. Enter an Address String appropriate for your PLC type and select the Data Type (from available choices). Click on the OK button.
2. Select when you want to restart the animation. Selecting ‘On’ will cause the animation object to reset the image index to the first image (image #0) and restart the animation when the tag value transitions from off to on. Similarly, selecting ‘Off’ will cause the animation object to restart the animation when the tag value transitions from on to off.

Images Tab

The images tab allows you to add images that are required for the animation object. Each image is automatically assigned an increasing index number. The index number determines the sequence of display of images in case of timed or discrete animation control. For example, in an animation with three images, image #0 is the first image in the animation, image #1 is the second image in the animation and image #2 is the final image in the animation. To add an image, click on "<Add a New Image>" and then either create image using the built-in image editor, or choose from one of the image sources. To edit an included image, select the image, and use built-in editor to modify the image, or use one of the image source to replace the image.



To add a new image, perform the following steps:

4. Click the item labeled <Add a New Image> in the image list
5. Choose from one of the following options:

a. To use an image from the symbol factory, click on the button labeled "Symbol Factory". Select the desired symbol and then close symbol factory.

b. To use an existing image, click on the button labeled "File". Locate the image using the file browser and click OK.

c. To copy an image from the clipboard, click on the button labeled “Clipboard”. Note that this button will be disabled if there are no images in the clipboard.
d. To create an image from scratch, click on the button labeled “Built-in bitmap Editor” (under the group box titled “Create Image”). Use the bitmap editor to create the new image and then click OK.

6. The newly added image will show up in the image list. Each image is automatically assigned the next available integer (starting with 0). Dragging and dropping the image to its appropriate location in the image list will modify the image number that is associated with the image (and hence change its position in the animation sequence).

To replace an existing image in the image list, perform the following steps:
3. Click on the image you want to replace on the images list.
4. Choose from one of the following options:
a. To replace the selected image with an image from the symbol factory, click on the button labeled “Symbol Factory”. Choose the desired symbol and then close the symbol factory.
b. To replace the selected image with an existing image, click on the button labeled “File”. Use the file browser to locate the image and click OK.
c. To replace the selected image with an image from the clipboard, click on the button labeled “Clipboard”. Note that this button will be disabled if there are no images in the clipboard.
d. To edit an existing image, click on the button labeled “Built-in bitmap Editor” (under the group box titled “Edit Image”). This will open up the selected image in the bitmap editor. Make the necessary modifications and click OK.

To remove an existing image in the image list, perform the following steps:
1. Click on the image you want to remove.
2. Click on the button labeled “Remove Image” (under the group box labeled “Preview of Selected Image”).
Once you are finished with the Multi Position Animation dialog, the individual images in the animation (as specified in the Images tab) would be placed on the screen on top of one another (the last image is placed at the top) with a slight horizontal and vertical offset. You can then move each image to its appropriate location on the screen. The images in the screen (regardless of their location on the screen) represent the same multi position animation object, and double-clicking any of the images will let you edit the object. Selecting an image and placing the mouse over it displays the image number of that particular image. If you want to select all the images in the multi-position animation object, you can do so by right-clicking on a blank area on the screen and then checking the menu item titled “Select All Multi-Position Images” from the context menu. Once this is done, all the images of the multi position animation object can be moved around the screen together. Also, you can apply the same size, height or width to all the images in the multi position animation object by clicking on the appropriate item in the context menu.

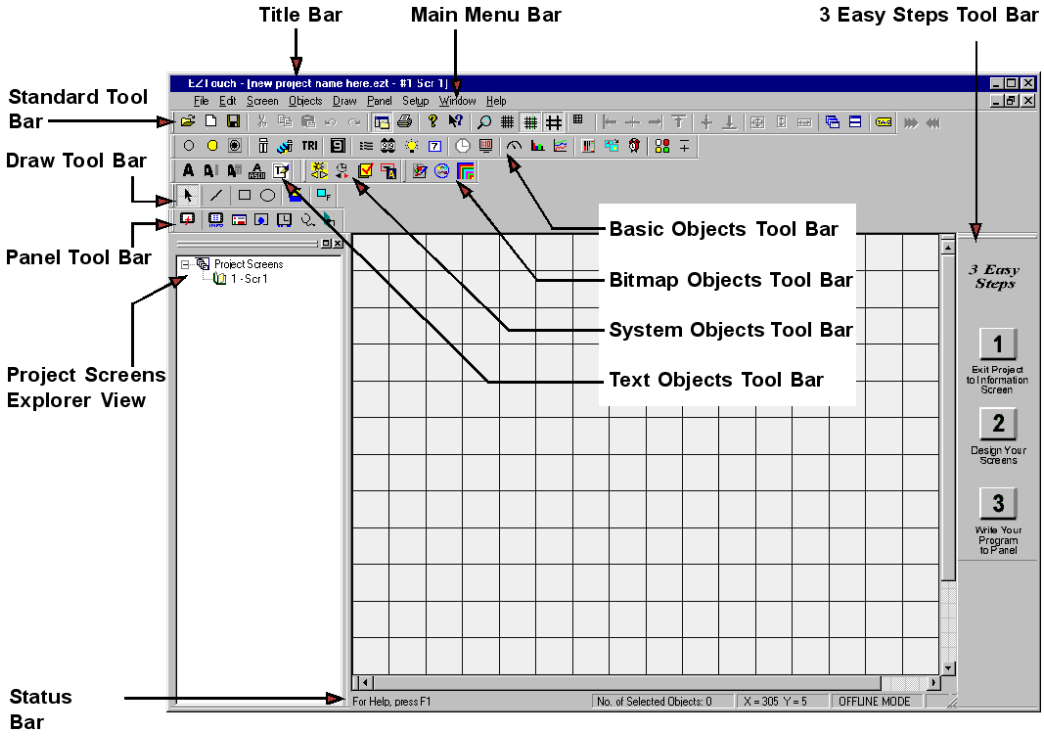
5

Main Programming Screen

In this chapter....

- — Title Bar
- — Main Menu Bar
- — Standard Tool Bar
- — Object Tool Bars
  - • Basic Objects Tool Bar
  - • Text Objects Tool Bar
  - • System Objects Tool Bar
  - • Bitmap Objects Tool Bar
- — Draw Tool Bar
- — Panel Tool Bar
- — Status Bar
- — 3 Easy Steps Tool Bar
- — Project Screens Explorer View
- — Programming Screen

Main Programming Screen



The Main Programming Screen is shown above. It is here that you will design your EZ Series Touch Panel operator interface screens. In this section, we'll briefly identify and describe the main features of this screen and familiarize you with the EZ Series Touch Panel Editor Programming Software work area.

Title Bar

The **Title Bar** tells you the name of the project and name and number of the screen that you currently have open.

Main Menu Bar

This is the **Main Menu Bar**. EZ Series Touch Panel Editor Programming Software menus are represented by the names listed across the top of the Main Programming Screen and directly under the Title Bar.

Standard Tool Bar

The **Standard Tool Bar** consists of icons for frequently used commands. These commands are also found in, and accessible from, the Main Menu Bar.

From left to right as placed on the tool bar, the icons and their functions are shown below.

- Open Poject
- Open screen
- Save screen
- Cut the selection and put it on the clipboard
- Copy the selection and put it on the cliboard
- Paste clipboard contents
- Undo the last action or Redo the previously undone action
- Display project screens Explorer view
- Print the active document
- Display program information, version number, and copyright
- Display help for clicked on buttons, menus and windows
- Zoom to a predefined screen magnification
- Displays Grid on the screen
- Snaps to Grid
- Show or Hide TouchCells
- Show 320 x 240 Rectangle (size of 6-inch panel screen)
- Aligns left sides of all the selected objects to that of left most object
- Aligns all the selected objects to the vertical center of screen
- Aligns right sides of all the selected objects to that of right most object
- Aligns top sides of all the selected objects to that of top most object
- Aligns all the selected objects to the horizontal center of screen
- Aligns bottom sides of all the selected objects to that of bottom most object
- Make all selected objects the same size

- Make all selected objects the same eight
- Make all selected objects the samewidth
- Arrange windows so they ovrlap
- Arrange windows as non-overlappingtiles
- Shows Tag Database
- **Show Tag Address on Object**
- **Show Tag Name on Object**
- **Simulate Next State**
- **Simulate Previous State**

Object Tool Bars

The Object Tool bars consist of icons that provide a shortcut to the predefined programming objects. These object shortcut icons are grouped into four tool bars: **Basic Objects Tool Bar, Text Objects Tool Bar**, **System Objects Tool Bar**, and **Bitmap Objects Tool Bar.** The objects provide generic panel replacement functions. Click on the icon to place the object on the screen and set the object parameters. These objects are also found in, and accessible from the **Main Menu Bar > Objects**.
From left to right as placed on the tool bar, the icons and the object they represent are shown below.

Basic Objects Tool Bar

- Push Button
- Indicator Button
- Radio Button
- Switches
- Step Switch
- Tri-State Switch
- Numeric Entry
- Recipe
- Thumbwheel
- Indicator Light

- Numeric Display
- Analog Clock
- Digital Clock
- Meter
- Bar Graph
- Line Graph
- PID Face Place
- Change Screen
- Alarm History
- Multi-state Indicator
- Increment/Decrement Value
- Report
- View File

Text Objects ToolBar

- Static Text
- Triggered Text
- Lookup Text
- Dynamic Text
- Text Entry

System Objects Tool Bar

- Adjust Contrast
- Increment/Decrement Hour
- Activate ScreenSaver
- Select Language

Bitmap Objects Tool Bar

- Dynamic Bitmap
- Bitmap Button
- Multi-state Bitmap

Draw Tool Bar

Any of the following draw functions can be accessed by choosing the selection from the Draw Menu or by clicking on the specific Draw Tool Bar icons shown below.

- Pointer
- Line
- Rectangle
- Circle
- Static Bitmap
- Draw Frame

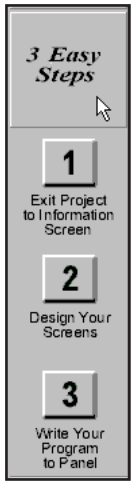
Panel Tool Bar

The Panel Tool bar consists of icons for frequently used commands. These commands are also found in, and accessible from the Main Menu Bar. From left to right, they are as follows:

- Trasfer to Panel
- Panel Information
- Display Screen
- Reboot Panel
- Panel Time and Date
- Diagnostics
- COM Port Configuration
- Simulate Project

Status Bar

The Status Bar is located at the bottom of the Programming Screen and shows the status of the current screen. It provides information about a tool bar or menu item on the main programming screen that the pointer passes over, the number of selected objects, the XY location (coordinates) of the cursor, and the current programming mode (ONLINE or OFFLINE).



3 Easy Steps Tool Bar

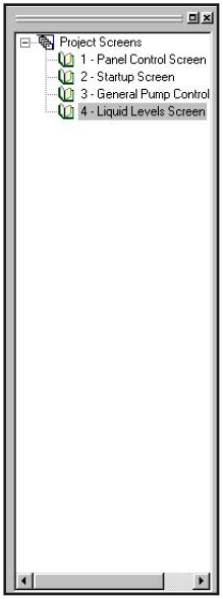
This tool bar appears on the right hand side of the main programming screen. It allows you to easily navigate to one of the three main steps in creating a program for your panel using the EZ Series Touch Panel Editor Programming Software.

Click on button number **1** to **Exit Project to Information Screen**. You will exit your current project and return to the **Step 1, Project Information Screen**.

Click on button number **2** to **Design Your Screens**. The **Open New Screen** dialog box will appear. You can select from one of the current project's screens, or enter a new number and name to create a new screen. Click on this button to quickly go to another screen in your project for editing, or create a new screen.

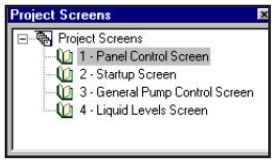
Click on button number **3** to **Write Your Program to Panel**. When you are finished with the project, or want to test it on the panel, select this button. The **Write Program to Panel Screen** will appear allowing you to transfer the current project to the panel memory. Click on this button to transfer your project to the panel.

Project Screens Explorer View



This window is located on the left hand side of the main programming screen. It is displayed by default. If you don't want it to display click on **Edit > Tool Bars > Project Screens** to deselect.

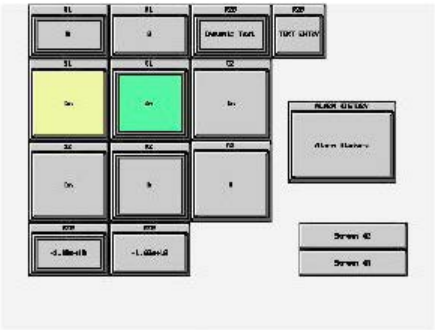
To go to a screen shown in the Project Screens list, double click on it. You can move the window to a different location in the programming window. Just click on the bar at the top, hold the left mouse button, and drag it to where you want it to appear. If you double click on the bar at the top it will change to a floating window, as shown below. Double click on the title bar on the floating tool box and it will relocate to its last position.



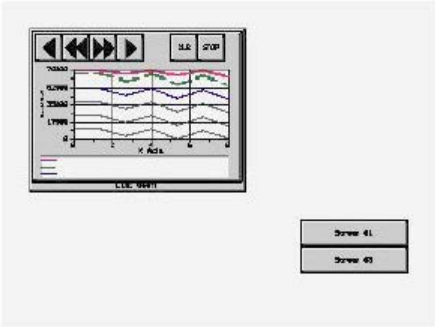
Screen Thumbnails

The Screen Thumbnail View feature allows you to see a thumbnail view of all the screens in the project. It also allows you to jump to any design screen in the project without knowing the screen number.

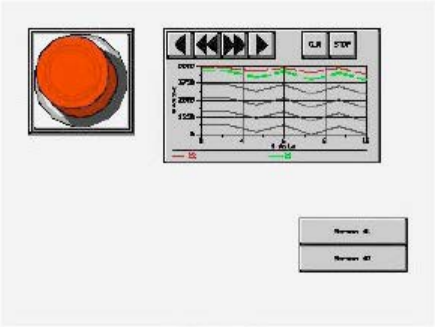
To use this feature, perform the following steps:
1. Click on the item labeled Screens Thumbnail View in the Project Screens toolbar. This will bring up a thumbnail view of the individual screens.



1 - Screen 1



2 - Screen 2

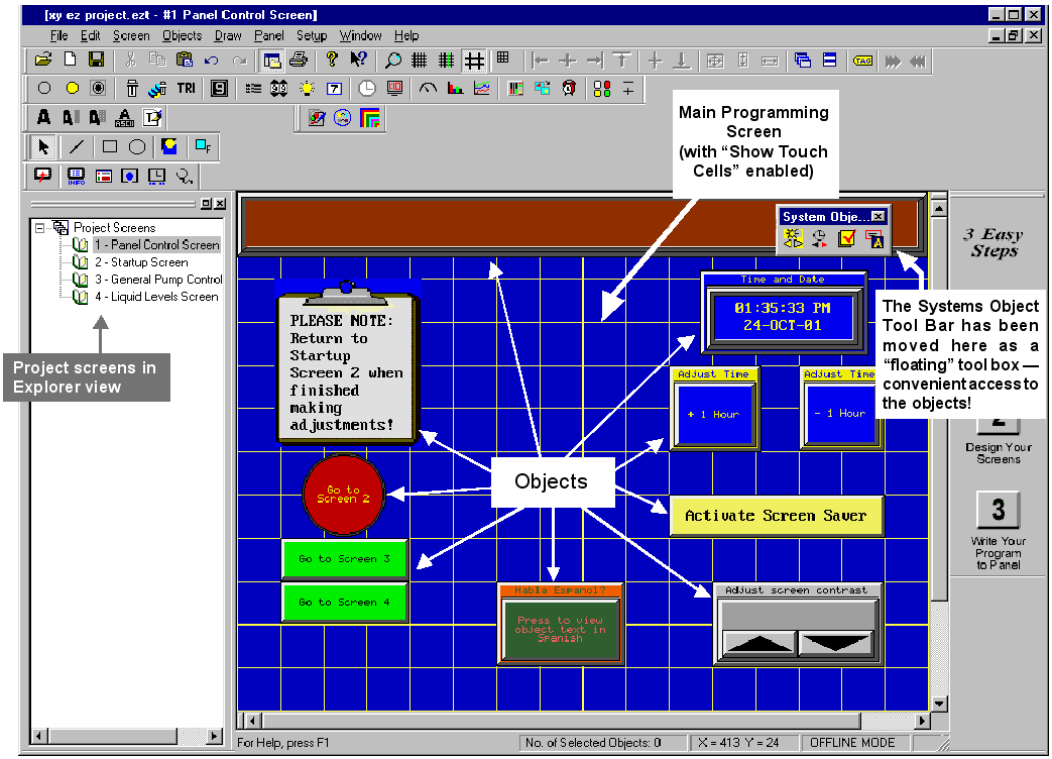


3 - Screen 3

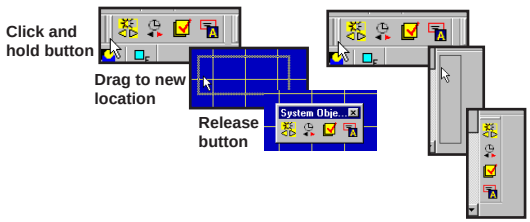
Programming Screen

This is the programming screen where you will build project screens that will in turn be displayed on the panel. You may program from 1 to 999 screens in a project.

These screens are used primarily to incorporate objects, messages, and graphics. Placing these items onto the programming screen allows you to have input and control over what is being displayed on the panel.



You can move the tool bars to several different locations on your programming screen. Just click and hold on the tool bar handle and drag to another location. Release the mouse button and the tool bar will snap to the closest available position.



6

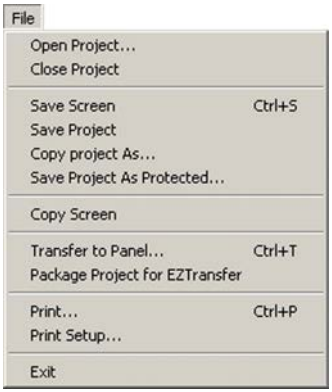
Reference

In this chapter....

- File Menu
- Edit Menu
- Screen Menu
- Draw Menu
- Panel Menu
- Setup Menu
- Window Menu
- Help Menu
- Right Click Menus
- Symbol Factory

Reference

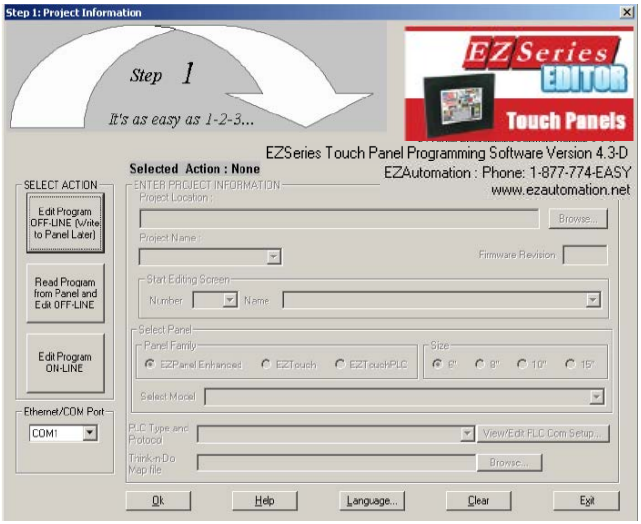
The Reference Section provides more details on Menu commands. It takes you through the Main Menu Bar item by item, command by command, with instructions. It also contains information about the various tool bars and the status bar.



File Menu

Open Project

To open an existing project or to create a new project while in a programming window, click on File > Open Project. The Step 1, Project Information dialog box will appear. Click on one of the SELECT ACTION buttons. Choose from the available project files or enter a new Project Name. Click on **OK** to open the project, or **Exit** to quit without opening.



Close Project

Click on **File>Close Project** to quit the current project.

Save Screen

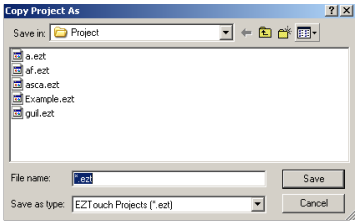
Click on **File > Save Screen** to save the current, active screen.

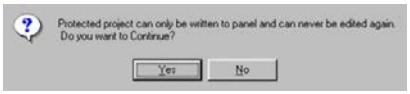
Save Project

Click on **File > Save Project** to save the current project. Screens, Project Attributes and databases will all be saved.

Copy Project As...

Click on **File > Copy Project As...** to save your project under another name. The dialog box shown to the right will appear allowing you to enter a name for the copied project.





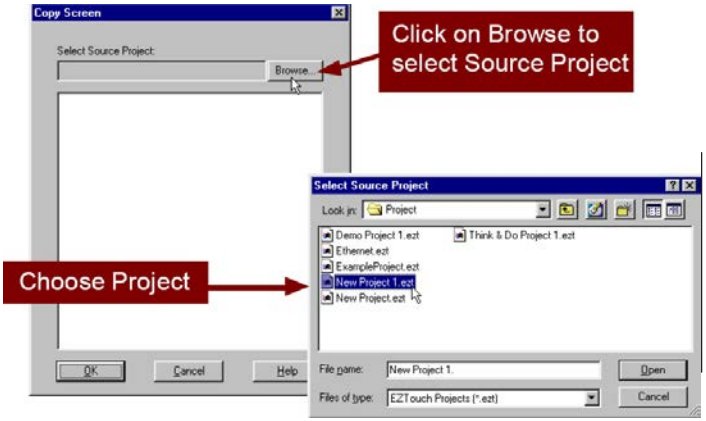
Save Project As Protected

If you click on **Save Project As Protected**, you will only be able to transfer the project, to and from the panel, as is. The project will not open in EZ Series Touch Panel Programming Software to allow editing. This protects the project from unauthorized changes after distribution. Make sure you have another copy saved if it will require changes or updates.

Copy Screen

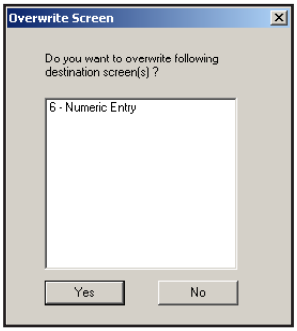
If you want to copy screens from another project (.ezt) into the current project, click on **Copy Screen**. You will be copying the tags associated with objects in the screen also.

1. In the **Copy Screen** window, click on the **Browse** button and the **Select Source Project** window will open.

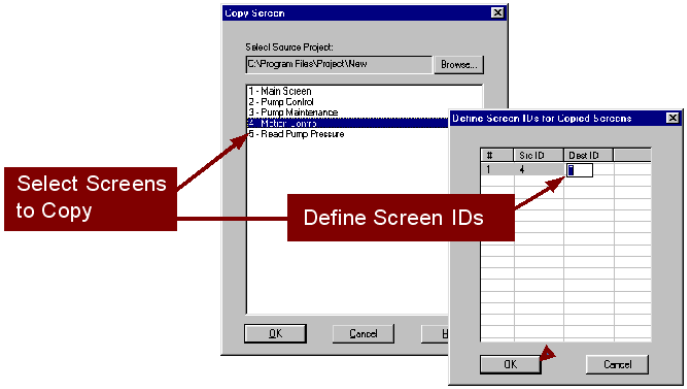


2. Click on the project that contains the screens you want to copy into your current (open) project.

*If the **Source ID** is the same as the **Destination ID**, a dialog box will appear asking you if you want to Overwrite the Destination ID (screen). Click **Yes** if you want to overwrite the screen, click **No** if you do not want to overwrite the screen(s).*



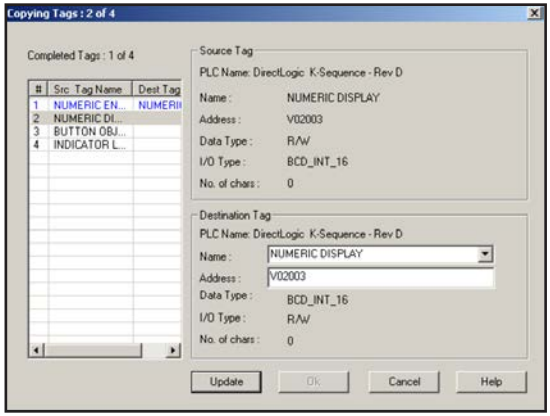
3. The **Copy Screen** window will list the programmed screens. Click on the screen(s) that you want to copy to highlight them, and then



click on **OK**.

4. The **Define Screen IDs for Copied Screens** window will open listing the Source ID (**Src ID**)for each screen you have selected to copy. The Source ID is the number of the screen in the Source Project. Under the column Destination ID (**Dest ID**), enter the screen number you want for the copied screen in your current project. Click **OK** when finished.

5. Next, the **Copying Tags Screen** will appear. Here you may change the name and/or address of the Source Tag before it is copied in the Destination Tag database. This prevents overwriting tags with the same name and/or address. The screens will be copied into your current project with the number you have assigned. The name of the screen in the Source project will be the same in your current project. They will appear in the Project Screens Explorer view. You can also change the names by using the Rename feature. Click on menu item **Screen** > **Rename**.



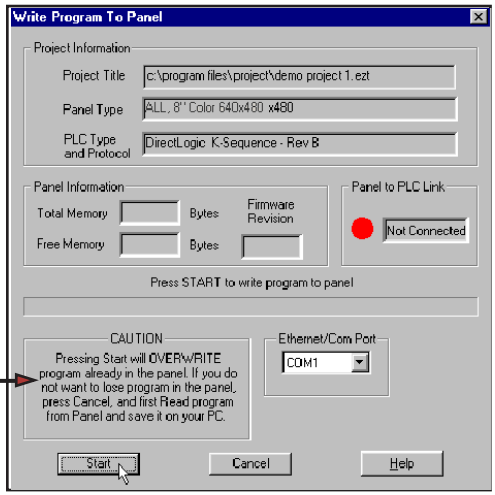
Transfer to Panel...

Transfer to Panel... allows you to transfer the current (open) project to the panel.

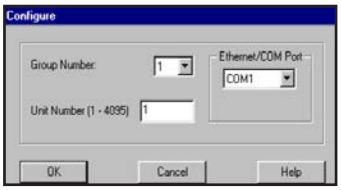
You can also click on the icon in the Panel Tool Bar, shown to the left.

Click on **Transfer to Panel** and the following dialog box will open. This dialog box provides information about the current project and the panel memory available.

DON'T LOSE AN EXISTING PROGRAM! *When you write the program to the panel, it will write over any program already loaded into panel. Save the existing program before you click on the Start button to transfer your new program. To do this, exit project and Read Program from Panel, then save it to your PC.*



Under **Project Information**, the screen provides you with the **Project Title** you are about to transfer, the **Panel Type** you are transferring the project to, and the **PLC Type and Protocol** that you have selected as used by your application. Press **Start** to begin the transfer or **Cancel** to abort.



If you receive an error message, check to ensure your panel to PC connections are correct. Under **Ethernet/COM Port**, click on **Configuration** button. The window shown to the left will appear. Click on the down arrow under **Ethernet/COM Port** to select the correct PC Port —**COM1**, **COM2**, **COM3**, or **COM4**. Group Number and Unit Number must match that of the panel you are trying to communicate with.

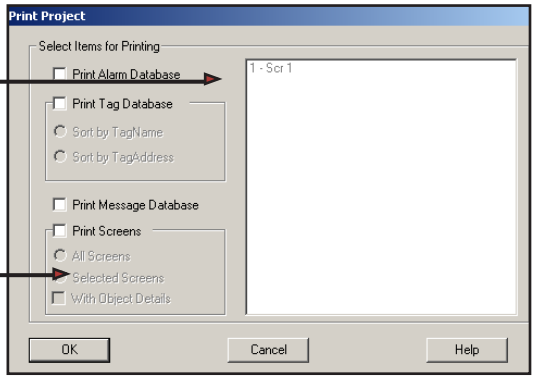
The Progress Bar will let you know where you are in the transfer process and when the process is complete.

After the transfer is complete, **Panel Information** gathered during transfer communication is displayed. It will tell you the **Total Memory** installed in your panel (in bytes) and the **Free Memory** available after the project upload. The panel **Firmware Revision** (internal software) number is displayed and whether or not a **Panel to PLC Link** is established.

Package Project for EZTransfer

The EZPackager utility, incorporated into EZ Series Touch Panel software, allows an OEM to distribute updates to EZ Series Touch Panel projects easily and quickly. Using the utility, OEMs can package one or more projects and/or firmware into a zip file for distribution to the end user via email or the web. View **EZPackager User Manual.pdf (P/N: EZ-PACKAGER-M)**, located in the install directory of your EZ Series Touch Panel Touch Panel software.

Be sure to select screens (click on them to select) up here — if you choose Selected Screens down here!

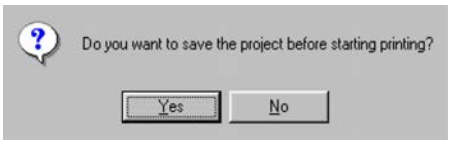


Printing from Panel

Only Alarms and Messages will print from the Panel. To print alarms from the Panel, see the Alarm Database section, page 175. To print Messages from the Panel, see the Message Database section on page 178.

Print

When you click on the **Print** menu item, you will be asked if you want to save the project. Click on **Yes** or **No**. The screen shown above will appear.



NOTE: To set the printer parameters, see page 182, Project Attributes, Printer tab. To set the panel COM1 port to "Printer," see Appendix D.

Select Items for Printing — Choose **Print Alarm Database, Print Tag Database** (select **Sort by Tag Name** or **Sort by Tag Address**), or **Print Message Database.**

If you want to **Print Screens**, select **All Screens** to print all of the screens from the project, or **Selected Screens** to print selected screens from the list.

Click on the box in front of **With Object Details**, if you want the details of the selected screens to print, also. Click on a screen in the list to highlight it. Press and hold the **Ctrl** key and click to select more than one.

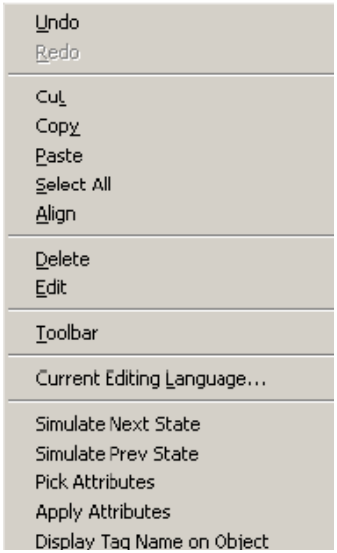
Click on **OK** when you have made your selections.

Print Setup

Choose or change your print settings here.

Exit

Click on **Exit** to quit the program.



Edit Menu

Undo

The **Undo** command is used to reverse the previous action. This function must be performed next in order for the action to be undone. The undo command goes back sixteen levels of undo. **Redo** will "redo" the previously undone action.

Cut

This allows you to **Cut** (remove) a selected item(s) to the clipboard.

Copy

This allows you to **Copy** (without removing) a selected item(s) to the clipboard.

Paste

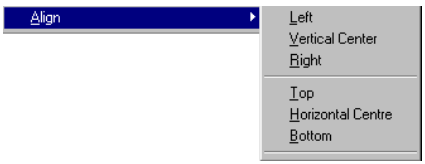
This allows you to **Paste** a selected item from the clipboard onto the displayed screen.

Select All

Click on **Select All** to select all items on the displayed screen.

Align

This allows you to **Align** selected items on the screen. You may also execute these commands by clicking on their respective icons on the standard tool bar. You must have at least two objects selected in order to execute the **Left**, **Right**, **Top**, or **Bottom** Align commands.



Left— Aligns left sides of all the selected objects to that of left most object
Vertical Center— Aligns all the selected objects to the vertical center of screen
Right — Aligns right sides of all the selected objects to that of right most object
Top — Aligns top sides of all the selected objects to that of top most object
Horizontal Center — Aligns all the selected objects to the horizontal center of screen
Bottom — Aligns bottom sides of all the selected objects to that

of bottom most object

Delete

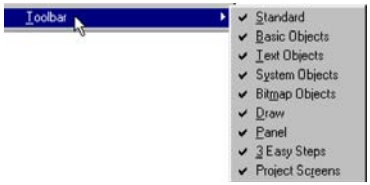
Click on **Delete** to remove a selected item without placing it on the clipboard.

Edit

Select an object and then click on the **Edit** command to make changes to an object's characteristics.

Tool bar

Click on **Tool bar** to see menu. Click on **Standard**, **Basic Objects**, **Text Objects**, **System Objects**, **Bitmap Objects**, **Draw, Panel**, **3 Easy Steps** (Navigation Tool bar), or **Project Screens** (Explorer View) to place a check mark enabling that tool bar, or click on a selected tool bar to remove check



mark and thereby remove it from view.

Current Editing Language

Allows you to select the **Current Editing Language**. Click on

Default Tag Data Type

Click on this menu item to set the **Default Tag Data Type**. Click on the down arrow to view the list of data types.

Tag Name as Address

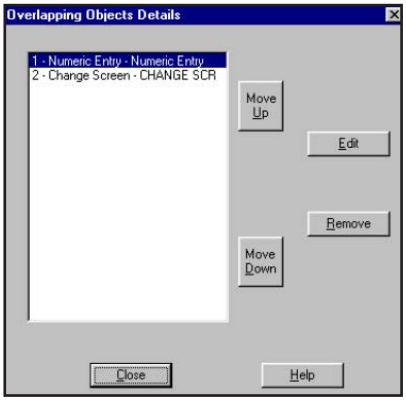
Click on this to use the Tag Name that you type in as the Tag Address. The Address must be in the correct Data Format. For example, if using an Allen-Bradley SLC 500, you might name the tag N7:2, which is the address format of the PLC register.

Objects Overlapping Warning

This is enabled by default. Click on it to deselect (check mark in front of item will disappear). This warning message, if enabled, will pop up when you attempt to save a screen or project with overlapping objects. Click **Yes** to save with overlapping objects or **No** to cancel the save.

Overlapping Objects Information

Click on this to bring up the following dialog box. Information about the overlapping objects is displayed. From here you can rearrange the order of the overlapping objects by bringing them forward (**Move Up**) or sending them back (**Move Down**). Click on the object in the list that you want to move to highlight it, and then click on the **Move Up** or **Move Down** button. You can also click on an object in the list and click on the **Edit** button to edit the object details or click on **Remove** to remove the object from the screen.



This dialog shows overlapping Dynamic Objects only. It does not show Static Objects (such as Static Bitmap and a rectangle or circle),

Pick Attributes

The Pick Attributes function can be accessed through the Edit Menu or by right-clicking onto an object. It basically acts as a copy and paste function only pertaining to the visual characteristics of an object. Once an object is selected, the Pick Attributes function copies the shape and color of the text and background and will apply those attributes by using the Apply Attributes function.

To Pick Attributes perform the following steps:

1. Select the object which has the attributes you would like to pick by clicking the object.
2. Click the **Edit Menu** and select **Pick Attributes** (you can also right-click onto the object and choose **Pick Attributes**).

NOTE: The Apply Attributes function will only work on like objects and it doesn't work on ALL objects.

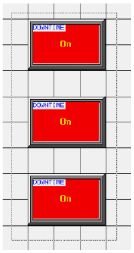
Apply Attributes

The Apply Attributes function will paste, or apply, the attributes you selected through the Pick Attributes function.

To **Apply Attributes** perform the following steps:

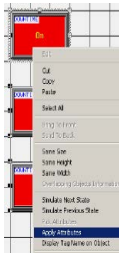
1. Select the object you want to Apply Attributes to by clicking the object (to select several objects you can click and hold to drag a box around the objects you would like to select.
2. Click the **Edit Menu** and select **Apply Attributes** (you can also right click onto one of the selected objects and choosing **Apply Attributes**).
3. The Attributes from the object you performed the Pick Attributes function on should now appear in the objects you performed the Apply Attributes function on.

Step 1.



Select Objects

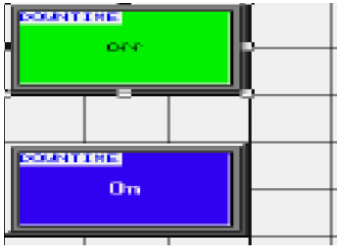
Step 2.



Click Edit Menu or right-click onto an object

Step 3.

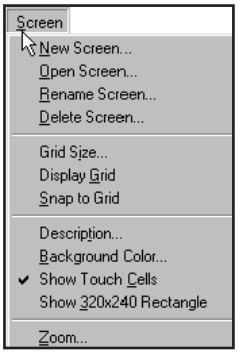
Apply Attributes



Simulate Next and Previous States

Click on the **Simulate Next State** and **Simulate Previous State** buttons to view the other states of a button (example: ON/OFF, Tri-State Button).

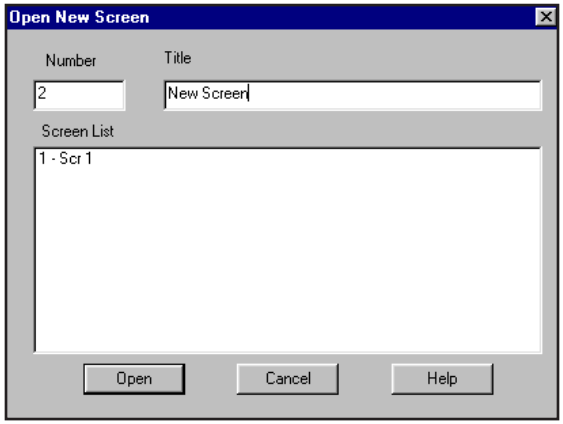
Screen Menu



New Screen

Enter a screen Number and a Title for the New Screen. Click on Open to display the new screen or Cancel to exit without saving the new screen.

Open Screen

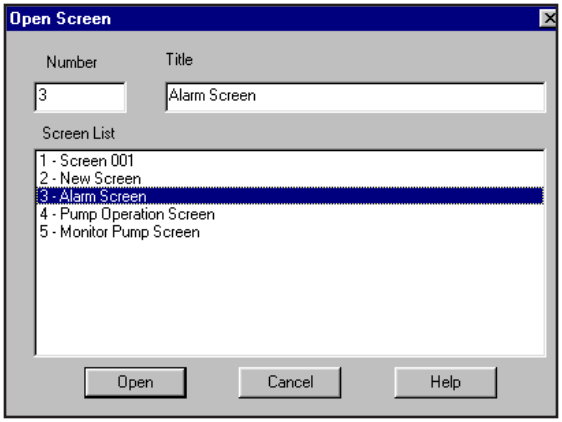


NOTE: See page 141 for information about Project Screen Explorer View.

The Open Screen command brings up the dialog box shown below. Click on the screen in the Screen List that you want to open and then click on the Open button.

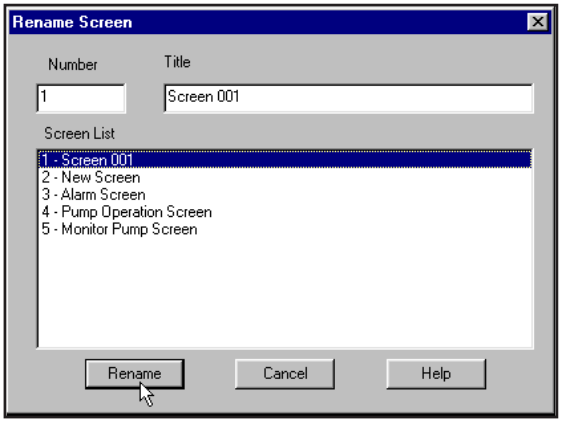
Rename Screen

This dialog box allows you to **Rename** an existing screen in your project.



1. Select the screen you wish to change from the **Screen List**.

2. Click in the **Title** box and change the title to the new name.
3. Click on the **Rename** button. Your screen will be renamed to

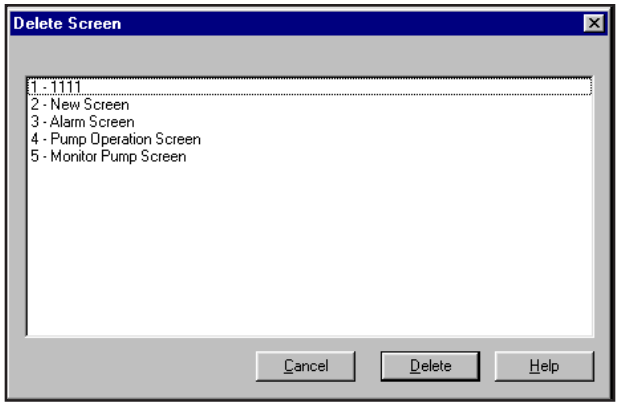


the Title you have entered.

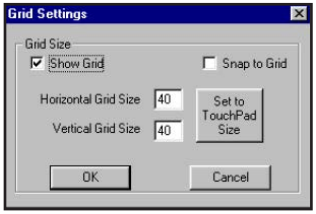
Delete Screen

Click on the screen(s) you want to delete from the project, and then press the Delete button.

Grid Size



When you click on **Grid Size** on the Screen Menu, the dialog box shown above will appear, allowing you to adjust the spacing between the grid



points. You may want to adjust to a character size, touch cell size or specific values. The size range is 3 to 100 (you will not be allowed to enter a value outside these parameters.) From here you may enable the **Show Grid** and the **Snap to Grid** features.

To adjust the grid size:

1. Type in a value in the box after Horizontal and Vertical Grid Size, or click on the Set to TouchPad Size to set the grid to 40 by 40 (or 20 x 20, **see note** to the left). 40 pixels by 40 pixels is the size of a single touch cell on the panel and is the minimum size for any touch object.
2. Click OK to exit and save settings, or Cancel to exit without making any changes.

NOTE: EZ Series Touch Panel Model Part Numbers EZ-S6W-RS, EZ-S6W-RSU, EZ-S6M-F, EZ-S6M-FH, EZ-S6M-R, EZ-S6M-ES, EZ-S6M-RS, EZ-S6C-F, EZ-S6C-FH, and EZ-S6C-K have 20 pixel by 20 pixel touch cells. The minimum Grid or size for any touch object on these panel models is 20 x 20.

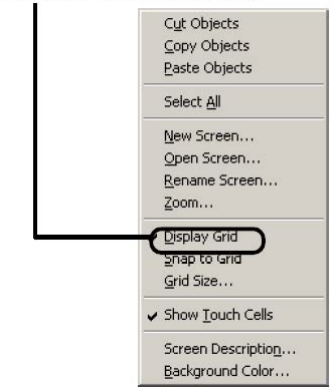
Display Grid

The Display Grid function is the display equivalent of graph paper. Represented by a series of dots, the grid helps you align your drawings and objects and make them more precise.

There are three ways to enable this function:

1. Click on the icon in the Standard Tool bar.
2. Right click on an empty area of the screen window. The menu shown to the will appear. Click on **Display Grid**.
3. From the Main Menu Bar, click on **Screen**>**Display Grid**. (You can also activate this feature from the **Grid Size** dialog box, described above.) A check mark will appear to show you that it is enabled. Click on it again to hide the Grid.

Click here to Display Grid



Snap to Grid

Snap to Grid attaches lines, rectangles, circles and other drawn objects to grid points as they are drawn. Objects placed on the screen will align with the grid also.
There are three ways to enable this function:

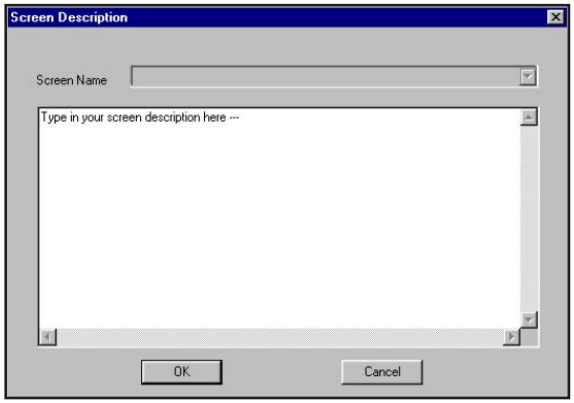
1. Click on the icon in the Standard Tool bar.
2. Right click on an empty area of the screen window. The menu shown to the will appear. Click on **Snap to Grid.**
3. From the Main Menu Bar, click on **Screen > Grid Size**. A dialog box will appear. Click on the box in front of **Snap to Grid**. (You can also activate this feature from the **Grid Size** dialog box, described on the previous page.) A check mark will appear to show you that it is enabled. Click on it again to disable snap feature.

Description (Screen)

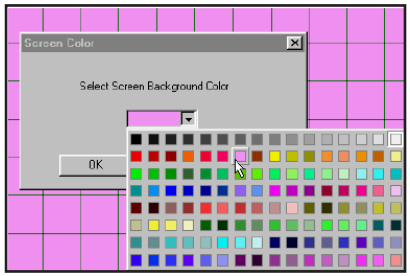
Click on this menu item to view, enter, or edit a description of the current screen. You may enter up to 400 characters. When you print this screen, the description you have entered here will appear on the printed page beneath the picture of the screen.

Screen Background Color

This feature allows you to change the color of your Screen Background.

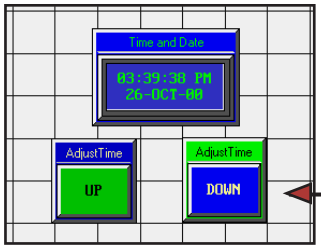


Click on the down arrow to view the color palette. Move the pointer over the color swatches to view the color of the background on your current screen. Click on the color you want to select.



Show Touch Cells

Click on Show Touch Cells and a grid will appear on the screen representing the touch cells on your size screen. This makes it easier to place your objects directly over touch cells. Click on this

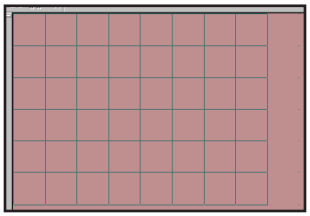


menu item again to disable.

Show 320x240 Rectangle

With Show Touch Cells selected

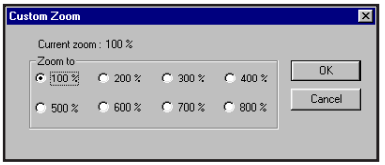
Click on this men item or the icon to show a 320 x 240 area on your 8-inch or 10-inch programming screen. The 320 x 240 area depicts the size of the 6-inch panel screen. This is useful when designing screens for more than one panel size. *Be sure to select* ***Screen >Show Touch Cells*** *when using this feature, in order to actually see the rectangle.*



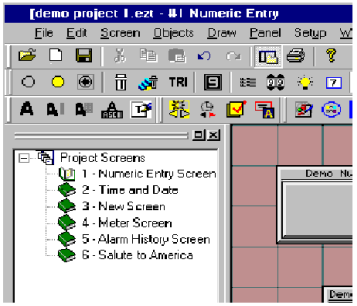
Zoom

Click on Zoom to view your screens at preset magnifications. Select from the available magnifications. Use the scroll bars to the right and bottom of the screen to view another area of the screen.

Project Screens— Explorer View



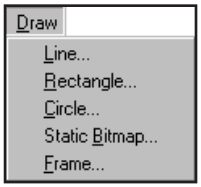
You may also use the Project Screens Explorer View to navigate between screens while programming in EZ Series Touch Panel Programming Software. Double click on an existing screen listed in the Explorer window that you want to edit. The Main Programming Screen will open to the selected screen. You can easily switch between screens you are working on, to copy, paste, make changes, etc.



Objects Menu

Because objects are the main screen creation tool in the project, a section of this manual is dedicated to explaining each object in detail. For information about an object, see the OBJECTS chapter of this manual on page 44.

Draw Menu



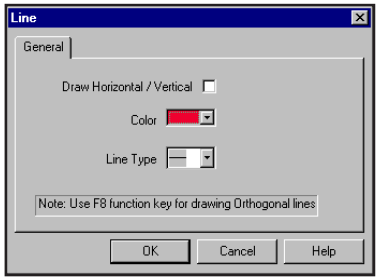
NOTE: To toggle between horizontal/vertical lines and diagonal lines, you may press F8 on your keyboard.

Line

The Line draw tools allows you to draw a line.

To draw a **Line**:

1. Click on the Line icon on the tool bar or select Line from the Draw Menu.
2. A dialog box will appear allowing you to select the color and type of line to draw.
3. Click on the box following **Draw Horizontal/Vertical** to limit the line draw to horizontal and vertical lines. All lines will automatically



be drawn either up and down (vertically), or across the screen (horizontally).

4. Select a point on the screen with the pointer and click the left mouse button. Move the mouse to draw the line. When you've completed the line, click the button again to terminate the segment.

Rectangle

This Draw tool allows you to draw a Rectangle

To draw a Rectangle:

1. Click on the Rectangle icon on the tool bar or select Rectangle from the Draw Menu.
2. A dialog box will appear allowing you to select the outline and the fill color.
3. Select a point on the screen with the pointer and click the left mouse button to locate the first corner of the rectangle. Pull the box with the mouse to the size you want and release the mouse button to set the box size.

Circle

The Circle Draw tool allows you to draw a circle.

To draw a Circle:

1. Click on the Circle icon or select Circle from the Draw Menu.
2. A dialog box will appear allowing you to select the outline and fill color of the circle.

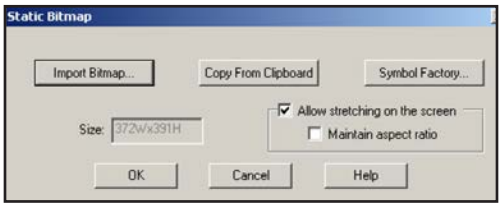
3. Select a point on the screen with the pointer and click the left mouse button to locate the starting point of the circle. Pull the circle with the mouse to the size you want and release the mouse button to set the perimeter size.

Static Bitmap

This object allows you to import a bitmap and place it on the screen.

To place a Bitmap on the screen:

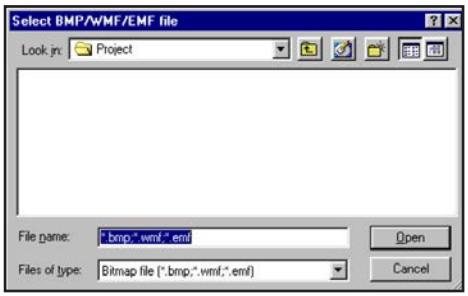
1. Click on the Static Bitmap icon or select Static Bitmap from the Draw Menu. The following dialog box will appear.
2. If you want to be able to stretch the image once it is placed on



the screen, click in the box in front of **Allow stretching on the screen**. If you want to **Maintain aspect ratio**, click in that box, also.

3. There are 3 options for importing a bitmap:

a. Click on the **Import Bitmap** button and a window will appear (shown below) allowing you to navigate to the directory/folder where a Bitmap (.BMP), Windows Metafile (.WMF), Windows Enhanced Metafile (.EMF) file resides. Click on it to highlight and click on the Open button. The File Name and Size of the graphic file will be displayed. If the graphic file is too large, you will be asked if you want it to be resized to fit the screen (see message to the left).



NOTE: (IMPORT BITMAP option) To size a Bitmap once it has been placed on the screen, click on it to select, grab one of the handles and drag to the size you want.

NOTE: (SYMBOL FACTORY option) To SIZE a symbol in Symbol Factory, go to Options in the Symbol Factory when selecting the symbol. (See instructions on page 162.)

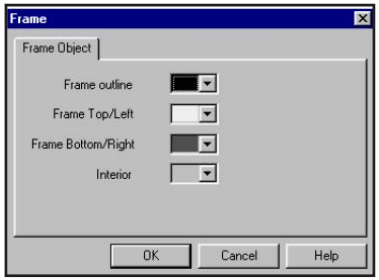
b. You may also click on **Symbol Factory®** to gain access to a library of over 4,000 symbols for industrial automation, including pumps, pipes, valves, tanks, mixers, motors, ducts, electrical symbols, flow meters, material handling, sensors, PLC's, transmitters, and ISA symbols. Once in Symbol Factory navigate to the symbol you want to import, click on Copy and the symbol is automatically imported into the object. (See next pagefor sizing a bitmap in Symbol Factory.)

c. The third option is to click on **Copy from Clipboard**. This will copy a bitmap you have saved to the clipboard onto the current screen. You can copy a bitmap saved or created in another program onto the system clipboard, and then import it into the current screen.

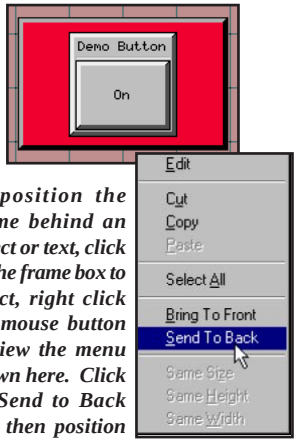
3. Click **OK** to import the bitmap, or **Cancel** to quit.

Frame

This Draw tool allows you to draw a Frame. It can then be placed behind an object or text.



Draw a Frame around a Button object.



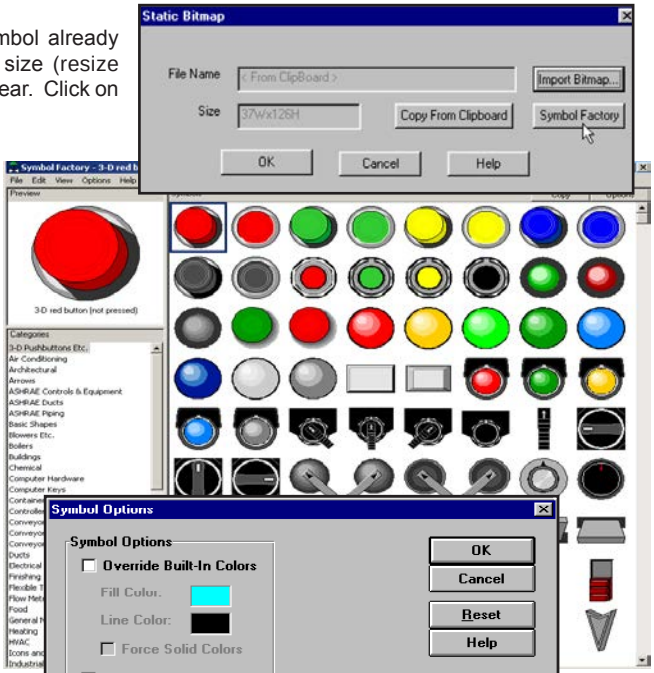
To position the frame behind an object or text, click on the frame box to select, right click the mouse button to view the menu shown here. Click on Send to Back and then position the frame around the object.

To draw a Frame:

1. Click on the Frame icon on the tool bar or select Frame from the Draw Menu.
2. A dialog box will appear allowing you to select the color of the Frame outline, Frame Top/Left, Frame Bottom/Right and Interior.
3. Select a point on the screen with the pointer and click the left mouse button to locate the first corner of the frame. Grab a corner or side handle of the frame with the mouse to the size you want

Sizing a Bitmap in Symbol Factory

Double click on the Static Bitmap symbol already placed on the screen to change the size (resize object). The screen to the right will appear. Click on **Symbol Factory** button.



The **Symbol Factory** screen to the right will appear.

Click on the **Options...** button.

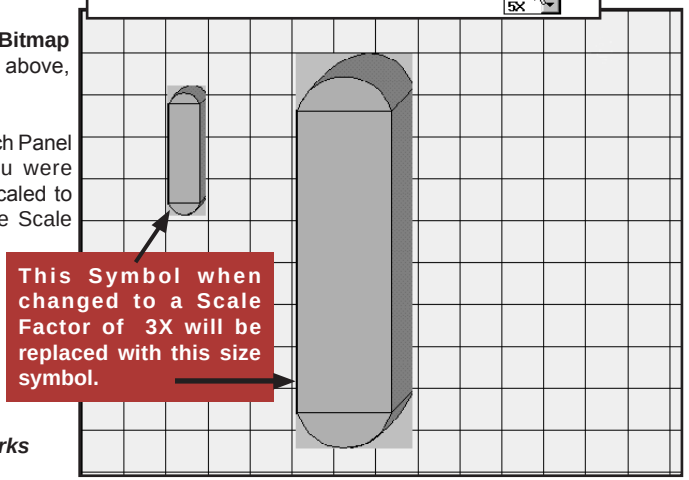
When picture symbols are exported as bitmaps, they are exported at the size of the **Preview** window. If you need a larger bitmap, you can increase the **Export Scale Factor** from 1X to 10X from the **Symbol Options** screen. Fine adjustment of the exported bitmap size can be done by resizing the **Preview** window. To resize the **Preview** window, drag its right or bottom edge.

From the **Symbol Options** screen, click on the DOWN Arrow next to **Export Scale Factor** under **Export Options**. Select the Scale Factor (in this case 3X). Click on **OK**.

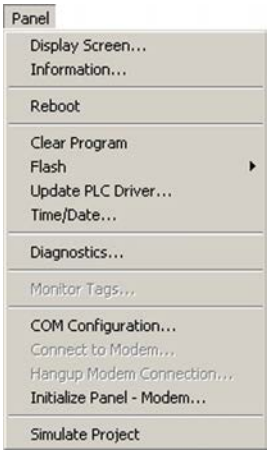
You will be taken back to the **Symbol Factory** screen shown to the right. Click on the **Copy** button.

You will be taken back to the **Static Bitmap** Screen (first screen capture shown above, right), click on OK.

You will return to the EZ Series Touch Panel Editor Programming Screen you were configuring. Your object will be scaled to the size you have selected. If the Scale Factor you have selected is too large for the screen, you will be allowed to import the bitmap. Factor.



Sizing a Dynamic Bitmap object in Symbol Factory works the same way!

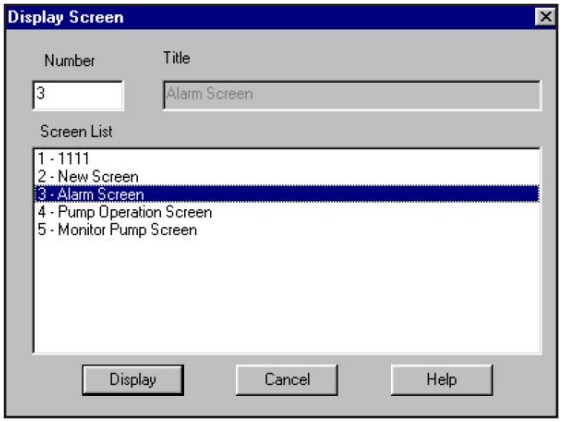


NOTE: When going on-line with any of the Panel Menu items, ensure that the correct COM Port/ Ethernet is selected. Click on COM Configuration to make your selection.

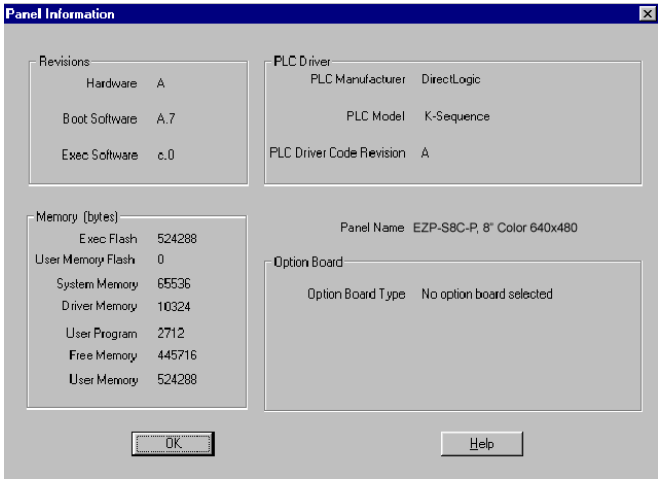
Panel Menu

Display Screen

This selection allows you to select a screen to display on the panel. To display a screen, enter the number or click on the name in the Screen List to highlight it, and then click on the **Display** button.



Information



Click for important information about the EZ Series Touch Panel unit you are using and your PLC. Information includes:

Revisions:

Hardware: This is the revision of the EZ Series Touch Panel unit.

Boot Software: This is internal panel firmware used to power-

up the panel.

Exec Software: This is also internal firmware, used to display panel information and allow panel adjustments to the internal clock, Contrast adjustment, and testing of the Touch cells and Display.

Memory (bytes):

Exec Flash: Amount of memory available to hold the boot and exec firmware.

User Memory Flash: This will let you know if the panel (all models, except 6-inch mono restricted (P/N EZ-S6M-R or EZ-S6M-RS) can have a Flash card installed. (It will say 0 if not installed.) This feature allows you to back up your program from the panel itself. There are two available memory sizes — 512K (P/N EZ-FLASH-1) and 1 MEG (P/N EZ-FLASH-2). Once the program is backed uponto the card, you can use it to load the program into different units — no programming computer is necessary.

System Memory: This tells you how much RAM memory is used by the firmware.

Driver Memory: This is the memory used by the PLC Driver.

User Program: This is the size of the program that you currently have loaded into your panel.

Free Memory: This is the RAM memory that you have left to use in the panel.

User Memory: This is the total RAM Memory available for use in the panel.

PLC Driver:

PLC Manufacturer, PLC Model, PLC Driver Code Revision: This provides information about the type of PLC you are using.

Panel Name: A description of the panel model is provided.

Option Board:

Option Board Type: This tells you if you have an option board installed and the type.

Reboot

Click here to reboot the EZ Series Touch Panel.

Clear Program

Click here to Clear the current user program from the panel.

Flash

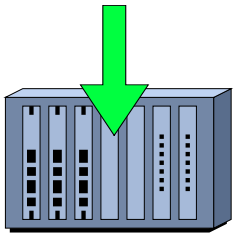
Click on **RAM to Flash** to copy RAM memory to Flash card. This will transfer the user program loaded on your panel to the Flash Card. The Flash card may then be removed and installed into another panel to transfer to the RAM. You may also backup your user program to save it before shutting off power to the panel. You may then reinstall the program later.

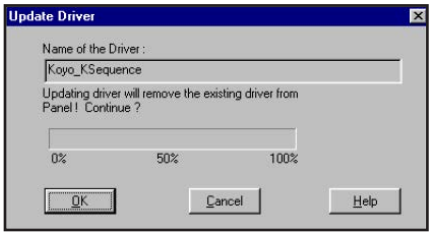
Click on **Flash to RAM** to copy the contents of the Flash card to the panel RAM memory. This is used to copy the user program from one panel to another or to reinstall a program to the panel.

Update PLC Driver

Click on this to update your PLC Driver. This will send the current PLC Driver code to your panel (other project information is not sent.) Be aware that the existing driver will be removed from the panel. Click on **OK** to start the update, or **Cancel** to quit without updating.

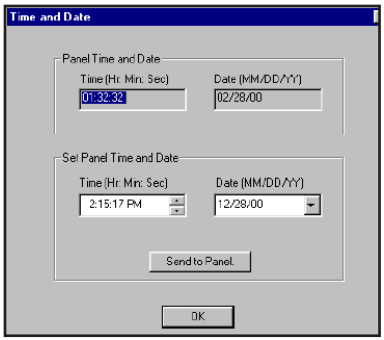
PLC DRIVER CODE only





Time/Date

Here you may view and set the **Panel Time and Date** and then send it to the panel. The current Panel Time and Date will display in the window. Under **Set Panel Time and Date**, your PC time will display. To change the **Time**, click on the hour, minutes or seconds and type in the appropriate numbers or use



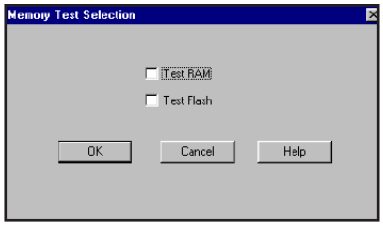
the UP/DOWN arrows to change the time.

To change the **Date**, click the DOWN arrow next to the date field. A calendar, shown below, will appear. Use the arrows to search for date. (The current

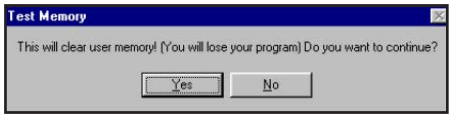
PC date will be circled.) Click on the **Send to Panel button** to send your changes to the EZ Series Touch Panel clock.

Diagnostics

To run a diagnostic program on the panel, click here. The following screen



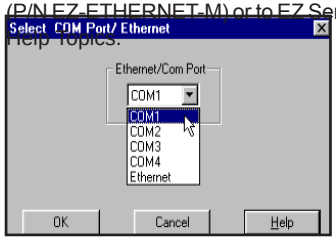
When you click on OK, you will receive the following "warning" message. Save program to disk before testing the panel memory!



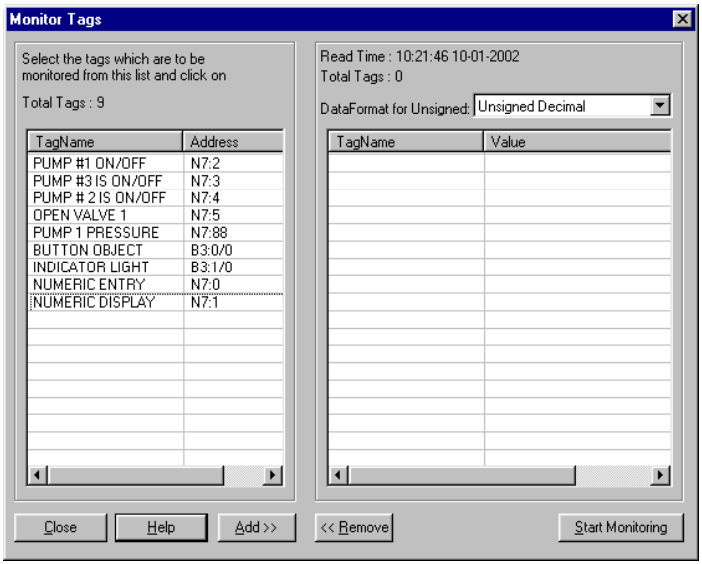
will appear, letting you choose from **Test RAM** and **Test Flash**. Click **OK** to begin diagnostic.

COM Configuration

When communicating with the Panel, ensure that the correct COM Port/ Ethernet is selected. Click on the down arrow for a list of available ports. For Ethernet configuration, refer to *EZEthernet Option Card Manual* (P/N EZ-ETHERNET-M) or to EZ Series Touch Panel Programming Software Help Topics.

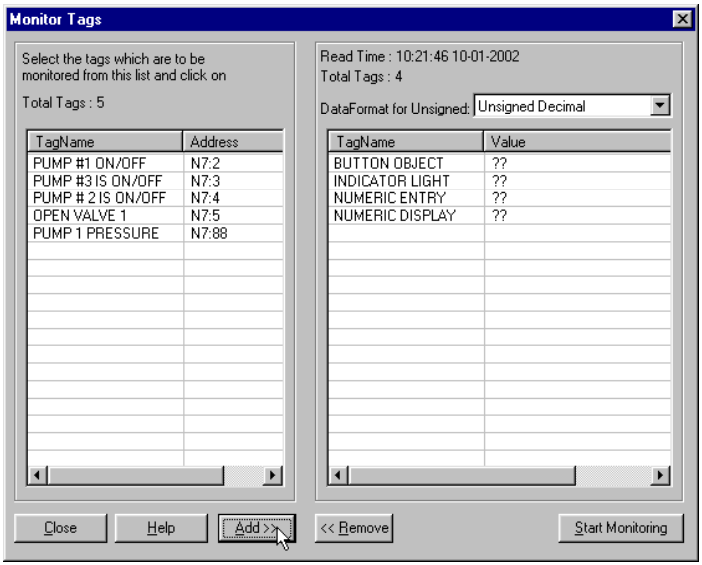


Monitor Tags



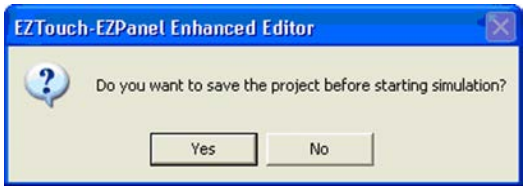
NOTE: If all tags are removed, the software will stop monitoring automatically.

Click on Monitor Tags if you want to monitor tag values from the EZ Series Touch Panel. You may select up to 100 tags to monitor at one time.
Click on the Tag Names (in the first column/list) that you want to monitor. Press the Shift key and then click to highlight more than one tag name. Then click on the Add >> button. To remove tag names from the list to be monitored, click on them to highlight and then click on the <<Remove button. They will be added to the list (on the right hand side) to be monitored. Select the Data Format for the value. Click on the Start Monitoring button to begin the monitoring process. The tag values from the panel will display in the Value column.

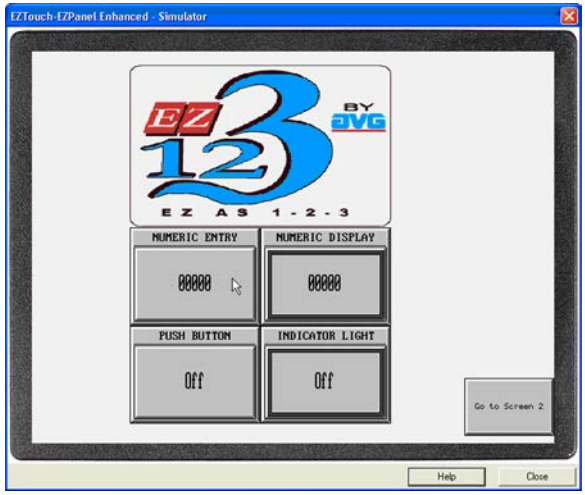


Simulate Project

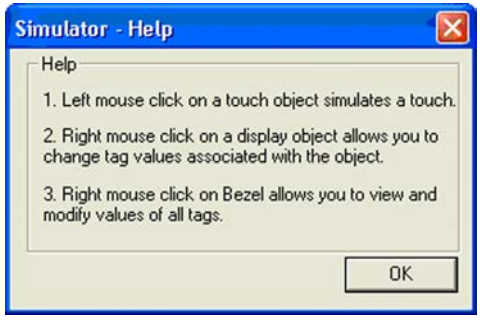
This feature allows the user to Simulate the entire project on a user's PC without transferring to a panel. Under Panel Menu, select Simulate Project to invoke the following dialog box.



Select "Yes" if you would like to save your current project on your PC before starting the Project Simulation. At this point the EZ Series Touch Panel programming editor will invoke a new window showing exactly how the project would appear on a panel.

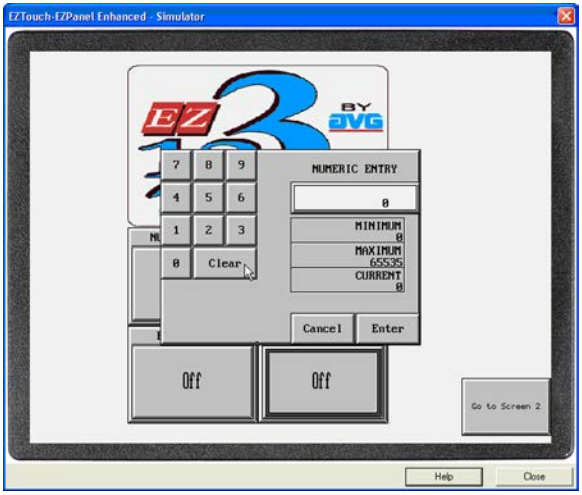


Click on "Close" to close the Project Simulation window and return back to the EZ Series Touch Panel programming editor. You can also click on the "Help" button at any time to view the available options with your mouse to simulate objects.

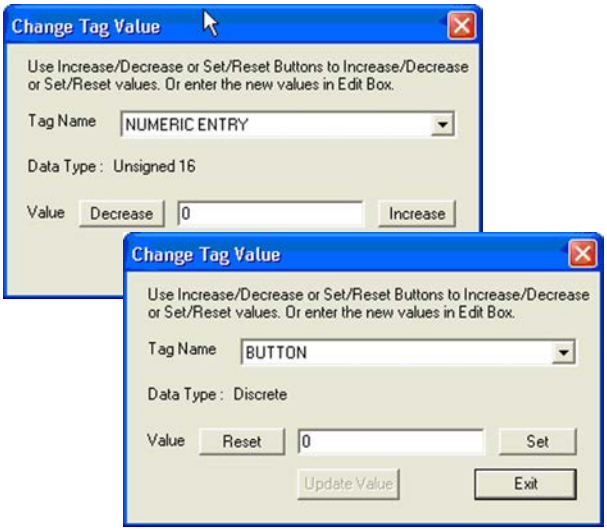


While simulating a project, you can do the following 3 actions:

- Clicking the left mouse button on a Touch Object will simulate a real touch on a panel

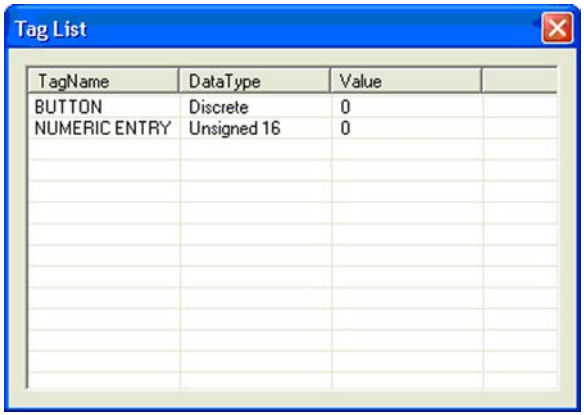


- Clicking the right mouse button on a Display Object will allow you to change the Tag value associated with that object

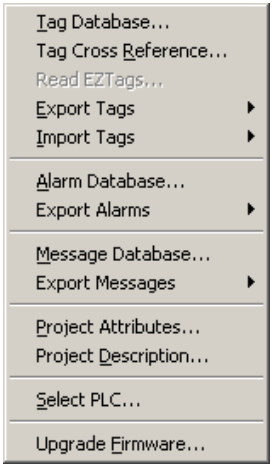


You can use this menu to specify a certain value to a tag and press “Update Value” or press the “Decrease / Increase” buttons to change the values in real time.

- Right Click on the bezel area to view / modify the value of any Tag associated with the project



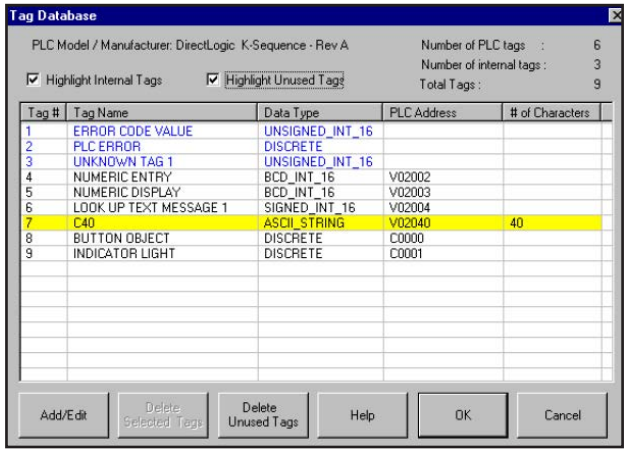
You can further click on any available Tag Name from the Tag list to invoke the “Change Tag Value” dialog box.



Setup Menu

Tag Database

The **Tag Database** is where you define the Tags for your project. A Tag can be a discrete (single bit) location or word location within the panel. Tags may be either **Internal** (no address) or **External** (PLC Address). In other words, a Tag is an alias for a PLC address or an Internal panel location that an object is communicating with.



PLC Model/Manufacturer

The model and manufacturer of the PLC used in the project is listed at the top of this dialog box.

Number of PLC tags, Number of internal tags, and Total Tags

The number of PLC and internal tags that are currently programmed in the project are provided. Also provided is the combined total of both kinds of tags.

Highlight Internal Tags

This is enabled by default. Click on the box with the check mark to deselect this option. When it is selected the internal tags in the list will be displayed in blue.

Highlight Unused Tags

Click in the box in front of Highlight Unused Tags to enable this option. The tags that are not currently linked to an object or attribute are highlighted in the list. The unused tags are highlighted in yellow.

NOTE: If your panel is connected to multiple PLCs, use the Station Number to address a specific PLC. For example: 2–V2002 would address the PLC Station Number 2.

Tag
This is the number of the Tag in the list.

Tag Name
You may enter a descriptive **Tag Name** of up to 40 characters.

Data Type
This is the format of the data. Select the **Data Type** that is appropriate for your type PLC. Choose from DISCRETE, SIGNED_INT_16, SIGNED_INT_32, UNSIGNED_INT_16, UNSIGNED_INT_32, BCD_INT_16, BCD_INT_32, FLOATING_PT_32, and ASCII_STRING.

PLC Address
The syntax for entering PLC addresses depends on the type of PLC. A message (similar to the one shown to the left) will display letting you know if the PLC Address type and Tag Data Type don't match or if the Address is invalid.

Number of Characters
If the Tag will read a character (ASCII) string from the PLC or write a character string to the PLC, you will need to enter the number of characters here. Each PLC register can contain 2 characters. You may enter up to 40 characters. The PLC will assign the correct number of sequential registers needed for the string. The address you have entered for the tag is the starting address. **See Appendix B for a list of ASCII characters supported by the EZ Series Touch Panel.**

Add/Edit Button
Click on this button to **Add** a new tag, or **Edit** an existing tag.

To Add a New Tag:

1. Click on **Add/Edit** button. (If you have existing tags, ensure that none are highlighted or you will go to the edit tag window.) The following screen will appear.

2. Click in the field next to **Tag Name** and enter a name for the tag.

3. Click on the DOWN arrow next to the **Tag Data Type** field and select the data type from the list.

4. Enter a **PLC Address**, or leave blank if it is an Internal Tag.

5. If you have selected **ASCII String** as your **Data Type**, the # **of Characters** field will become available. Enter or select the number of characters (up to 40) for the ASCII String.

6. Click on the **Add New Tag** button. The new tag will appear in the Tag Database list.

To Edit an existing tag:

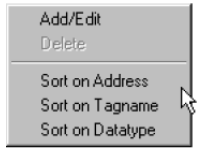
1. Highlight the tag in the list that you wish to edit.

2. Click on the **Add/Edit** button. The following screen will appear.

3. Make any changes and then click on the **Apply Tag Changes** button. The changes will be made to the tag and are reflected in the Tag Database list.

To Sort the Tag Database list:

1. Right click your mouse while your cursor resides anywhere in the Tag Database list. The popup menu to the right will appear.



2. From here you may **Add**, **Edit**, or **Delete** a tag. You may also choose to sort the list by **Address**, **Tag Name**, or **Data Type**.

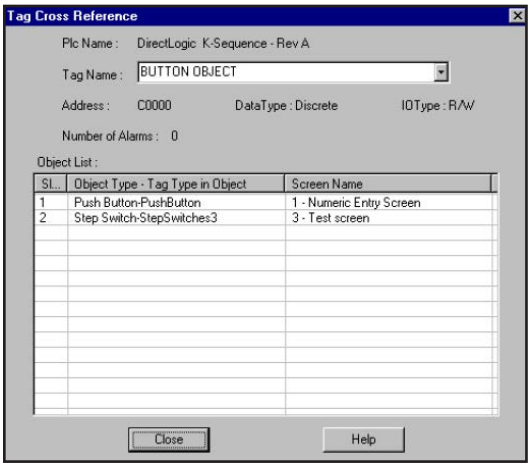
If you click on **Sort by Address**, the list will be sorted alphanumerically by the PLC address.
If you click on **Sort by Tag Name**, the tag list will be sorted alphabetically (A to Z) by the name of the tag.

If you click on **Sort by Data Type**, the tag list will be sorted by Data Type. For tags with same data type, it will perform a second sort by the address.

Tag Cross Reference

The **Tag Cross Reference** screen provides you with a list of the programmed tags and a cross reference to the objects that use them.

NOTE: The Tag Cross Reference screen is for information purposes only. You cannot change or edit the tag parameters from this window.



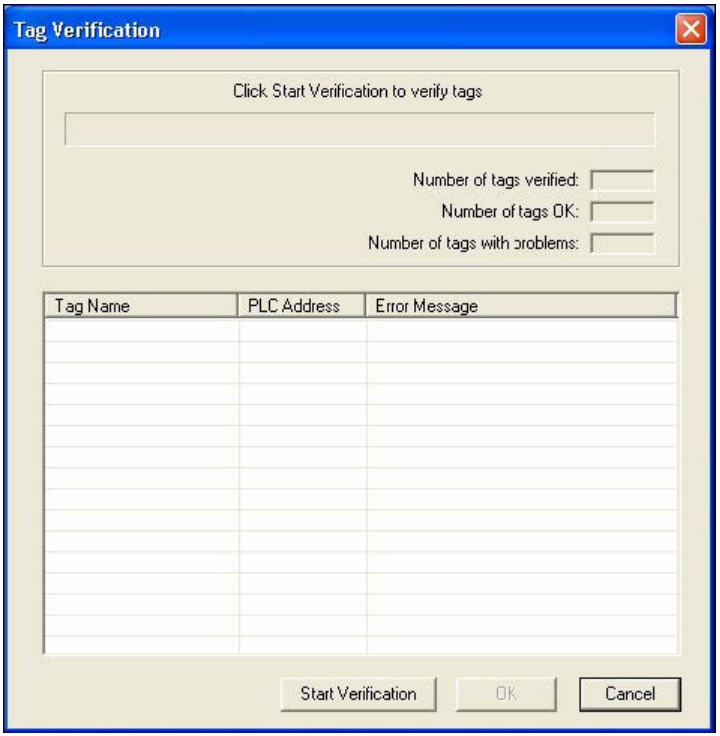
Information is provided on the **PLC Name** (type and protocol) at the top of the screen. **Tag Names** are listed alphabetically. Click on the arrow to scroll to a particular tag name. Information on the **Address**, **Data Type**, **I/O Type** and **Number of Alarms** programmed to the tag is given.

In the **Object List** you are provided with the objects or Project Attributes that use the selected Tag. The **Object Type,Tag Type in Object**, and the **Screen Name** of where the Object appears is listed in the window. To view specifics for each Tag, go to the **Tag Name** field, click on the DOWN arrow, and select one from the drop down list.

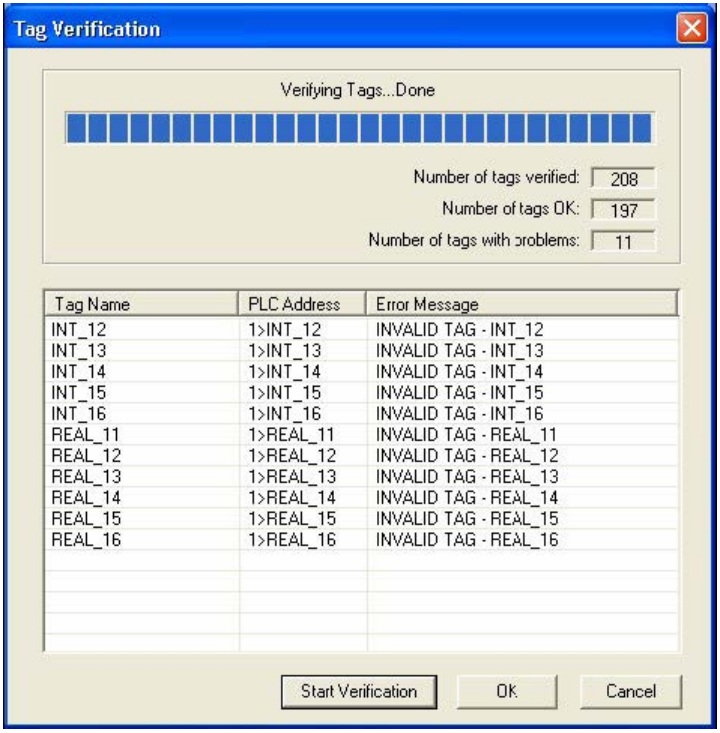
Tag Verification

Tag Verification allows you to verify the tag information stored in the panel against the actual tags in the PLC. Verifying tags can be very useful for diagnosing and correcting improper behavior of the user program that are caused by tag addresses mismatch between the panel and the PLC.

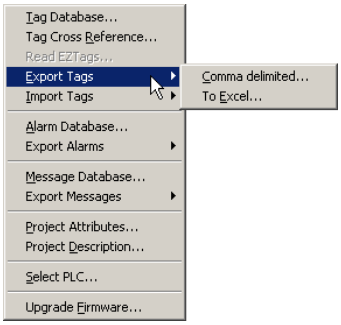
To perform tag verification, do the following steps:
1. Open a project in online mode (Note: tag verification can only be done in online mode).
2. From the setup menu, select the menu item labeled “Tag Database...”
3. Select the tags you want to verify (using the shift button and the left mouse key). If no tags are selected, all tags will be verified.
4. Click on the button labeled “Verify Tags...” This brings up the Tag Verification dialog box shown below.



5. Click the button labeled “Start Verification”. This begins the verification process. Tags that have failed verification show up in the list box with the tag name, tag address, and the error message returned by the PLC for the tag. If you want to cancel tag verification, click on the button labeled “Cancel Verification”.



6. Click the OK button. If the tag verification results showed one or more errors, the results would be stored in a tab-separated text file titled TagErrors.txt that is located in a subdirectory called Verification in the install path of the application. If there were no errors found in the tag verification process, any existing TagErrors.txt file would be deleted.
7. At this point, the application would return to the Tag Database dialog. If there were errors found in the tag verification process, the checkbox labeled ‘Highlight all tags that failed verification’ would be automatically checked and all offending tags would be highlighted in red. Otherwise, this check-box would be disabled. Note that while the actual verification of tags can only be done in online mode, the highlighting of tags that failed verification can be done in both online and offline modes, as long as the tag verification file (TagErrors.txt) exists and the PLC for the project matches the PLC type stored in the tag verification file.



Export Tags

Click on the **Export Tags** menu item to write the tags from your current (open) project to an Excel file or a CSV file.

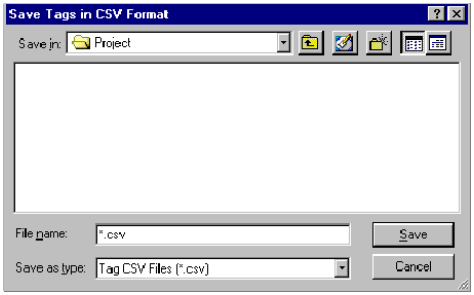
Comma delimited...

The CSV (Comma delimited or Comma-separated values) file format saves only the text and values as they are displayed in cells of the Tag Database. All rows and all characters in each cell are saved. Columns of data are separated by commas, and each row of data ends in a carriage return. If a cell contains a comma, the cell contents are enclosed in double quotation marks.

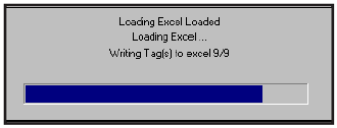
Example of what a CSV file looks like opened in Notepad:

```
NUMERIC ENTRY,BCD_INT_16,V02002,
NUMERIC DISPLAY,BCD_INT_16,V02003,
BUTTON OBJECT,DISCRETE,C0000,
INDICATOR LIGHT,DISCRETE,C0001,
```

Click on **Comma delimited...** if you want to save the tag database as a .CSV file. The following window will appear allowing you to name the file and navigate to the directory and folder where you want to save it.



A status window will appear letting you know the progress of the Exporting Tags process.



To Excel...

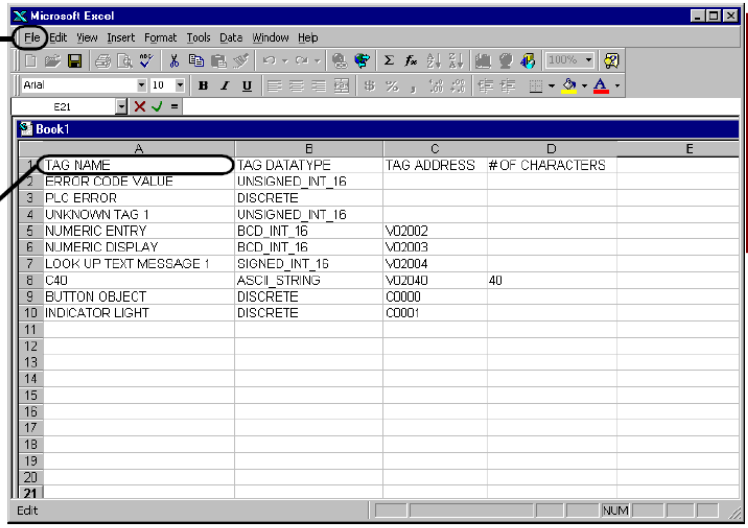
Click on the **To Excel...** menu item to write the tags from your current (open) project to a Microsoft Excel® file. The EZ Series Touch Panel Programming Software will open Microsoft Excel and write the tags to an Excel book as shown on the next page. Click on File >Save As in the Excel program and enter a name for the file. Click on the Save button to save the file under the name you have entered. Close Excel to return to EZ Series Touch Panel

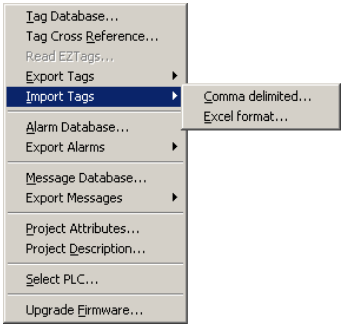
Microsoft Excel opens with exported tags written to the book.

Click on File > Save As, navigate to directory/ folder where you want to save the Tag Database as an Excel file.

The first line is a header line. Tag Name, Tag Data Type, Tag Address, and # of Characters (if applicable) are listed for each tag in the project database.

A message will appear letting you know whether or not the export was successful and how many tags were exported.



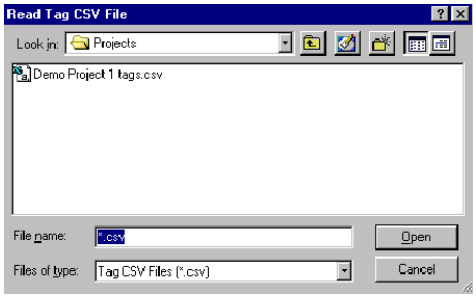


Import Tags

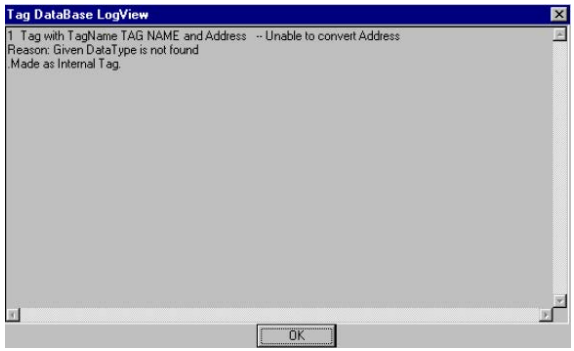
Click on the **Import Tags** menu item to import the tags into your current (open) project from a Microsoft Excel® (.xls) file or a CSV (Comma delimited or Comma-separated values) file format. DirectSoft Version 4.0, Build 16 (or higher) has the ability to export tags in a version that EZ Series Touch Panel can import. See DirectSoft documentation for details.

Comma delimited...

1. Click on **Import Tags > Comma delimited...** to import tags from a .CSV file. The following window will appear. Navigate to the folder where the file is stored.



2. Click on the .csv file you want to import to highlight it and then click on the **Open** button. The file will be written to the Tag Database. A **Tag Database Log View** will display letting you know if there were any problems importing the file into your current project.

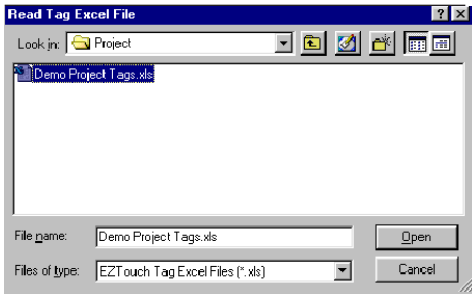


3. Click on **Setup>Tag Database** to view the database and make any corrections or changes.

Excel Format...

Click on the **Import Tags > Excel Format...**menu item to select the Microsoft Excel® file where the tag database resides. Navigate to the file you want, click on it to highlight it and then click on the **Open** button.

The **Tag Database Import from Excel** window will appear (shown on the



next page). EZ Series Touch Panel Editor Programming Software will read the **Excel Database Fields** and allow you to choose the field name that correlates with the **EZ Series Touch Panel Tag Database** field in your project.

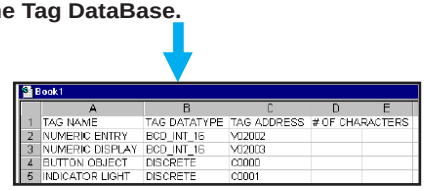
1. Click on the down arrow to view the **Excel Database Fields** and select the Excel field that corresponds to the **EZ Series Touch Panel Tag Database** field (**Tag Name**, **Data Type**, **Address**, **No. of characters**). (See **Tag Database Import from Excel** dialog, next page.)

2. Each column heading in the Excel file you have imported will display when you click on the down arrow next to each field. (You may have other information in the file that you cannot import into the Tag Database. The Tag Database only allows the four types of information shown in the dialog box, below.) Select the heading of the Excel column that corresponds to the column headings in the Tag Database.

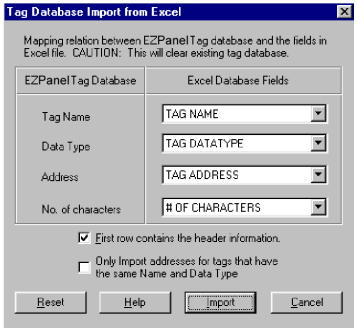
3. If the first row in the Excel file to be imported contains header information, click on the box in front of **First row contains the header information** (selected by default). If you want the software to copy over existing tags with the same Name and Data Type as in the Excel file that is being copied, click on the box in front of **Only import addresses for tags that have the same Name and Data Type**.

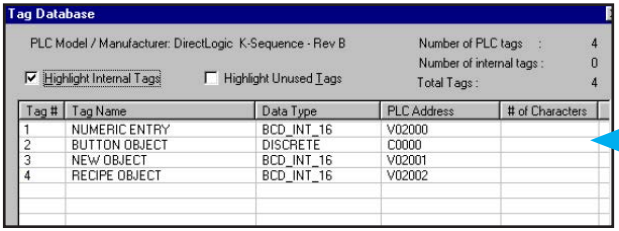
4. Click on the **Import** button to import tags. The tags will be written to your project. Tags that already exist will not be overwritten. A message (shown directly below) will appear letting you know if the **Excel** file was successfully imported into the **Tag Database.** The **Tag Database Log View** will appear to let you know if there were problems in the import process or if the tags already exist in the project. Open the Tag Database to make changes.

This is a sample of an Excel file that is selected to import into the Tag DataBase.



Here you will select the columns in the Excel file that correspond to the Tag Database columns.





Once you have made your selections and click on Import, the data in the Excel fields will be placed into the Tag Database columns, shown here.

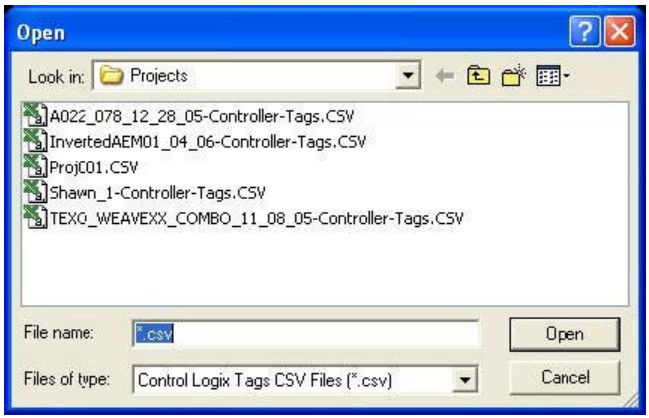
Importing ControlLogix Tags

ControlLogix tags can be imported into the current project from an RS-Logix software exported CSV tag file. EZ SeriesTouch Panel software currently supports only the following types of ControlLogix tags: BOOL, SINT, INT, DINT, REAL, STRING All other tags in the RS-Logix exported CSV file are ignored.

To import ControlLogix tags, perform the following steps:

1. Click on Import Tags > Import ControlLogix tags from CSV (Note: this menu item will only be enabled when one or more ControlLogix PLCs have been defined). This brings up the Import ControlLogix tag dialog box.

2. Select the ControlLogix PLC ID (using the dropdown combo-box) into which the tags will be imported. 3. Click the button labeled “Browse...” and select the RS-Logix software exported CSV tag file.



4. Click the OK button. Importing of the ControlLogix tags will now begin. If there were any problems in importing the tags, a log view window will be displayed to inform you of the errors. Otherwise, a message box would display notifying you of the number of tags that have been successfully imported. Once the tags have been imported, you can click on Setup>Tag Database to view the tag database and make any corrections/changes.

Screen Capture in Simulator

While simulating a project (menu: Panel > Simulate Project), you can capture screens for documenting your project. While simulating the project, follow below give steps to capture displayed screen:

1. Click the button labeled “Screen Capture”. This brings up the Save File dialog.
2. Specify the name of the image file where you want to save the captured screen. The image file is saved in .png format.

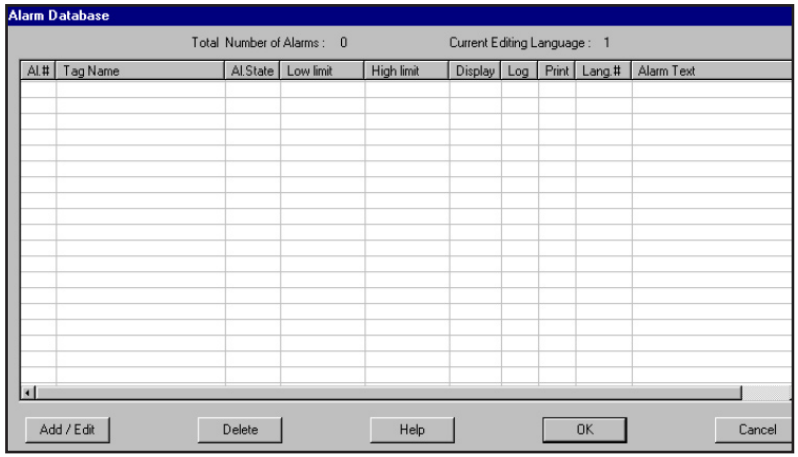
Search and Replace in Tag Name

This feature allows you to search for a character string (up to 40 characters) in the Tag Database, specifically, the Tag Name, and replace each instance of the character string with another character string. To use this feature, perform the following steps:

1. Click in the checkbox titled “Search and Replace in Tag Name”.
2. Enter the characters (up to 40) in the text field next to Find that you want to search for in the Tag Name.
3. Enter the characters (up to 40) in the text field next to Replace With that you want to replace in the Tag Name.
4. Click on the Find Next button. The program loader will find the character string in applicable Tag Names and highlight the line(s) where it appears.
5. Click on Replace if you want to approve/check each item before replacing. Click on the Replace All button if you want to replace all instances of the character string without checking.

Alarm Database

To program the panel to monitor the PLC for errors and trigger an alarm, see page 185, **Project Attributes, Panel to PLC tab, PLC Error and PLC Error Code Value**.



NOTE: The steps necessary to program your panel to monitor the PLC for errors and trigger an alarm are provided in Appendix A, Troubleshooting, "How do I Log and Display a PLC Error Message?"

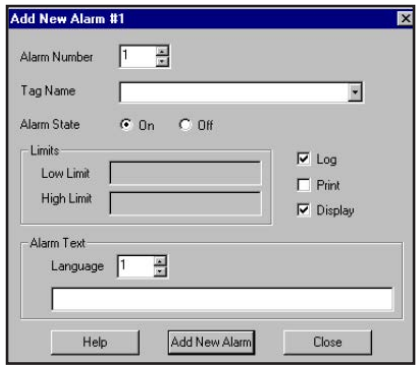
To program an alarm in the Alarm Database, perform the following steps: (Alarms are numbered from 1 to 999.)

1. Click on the **Add/Edit** button to add a new alarm. To edit an existing alarm, click on it in the list to highlight and then click on the **Add/Edit** button. One of the following screens will appear.

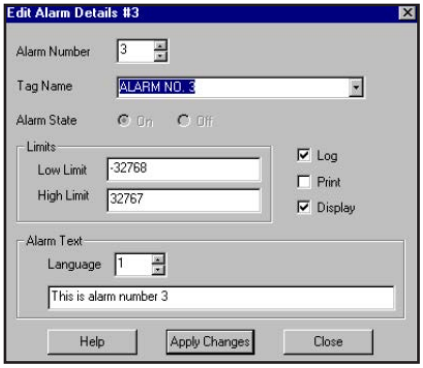
2. Use the UP/DOWN arrows next to the **Alarm Number** field to

Add New Alarm Dialog Box

NOTE: Alarms will be displayed across the bottom of the EZ Series Touch Panel Screen.



Edit Alarm Details Dialog Box



scroll to the alarm number you wish to add. Click on the DOWN arrow next to the **Tag Name** field and select the tag that will trigger the alarm.

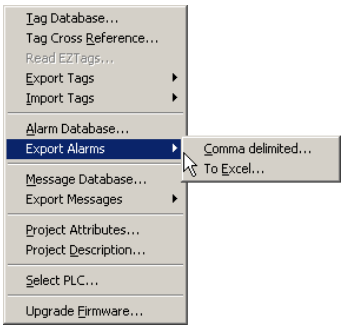
3. If your Data Type is **DISCRETE**, you will be able to select whether the alarm will be displayed when the bit is **On** or when the bit is **Off**. (If the data type of the tag is another data type, the **Alarm State** selections are not available.) The default is "On."
4. Enter the **Limits** (tag set points) — **Low Limit** and **High Limit**. The alarm will activate when the tag value goes outside the set point limits. The available ranges for the Low and High Limits will be displayed in these fields and are particular to the data type. The limits you place here must be within these ranges. (If the data type of tag is Discrete then data boxes for Low Limit and High Limit will not be available.)
5. Click on the box next to **Log** if you want the alarm to be logged in Alarm History when it is triggered. **The Alarm History object will store up to 64 alarms and, when the 65th alarm comes in, it will dump the oldest alarm.**
6. Click on the box next to **Print** if you want the alarm message to print out the Serial Port of the panel every time it is triggered. The Alarm print outs will look similar to the following:
7. Click on the box next to **Display** if you want the alarm to be displayed on the panel when triggered.

Alarm Print Out

```
TIME & DATE:  10:40:38  23-MAY-01
ACTUAL VALUE:                          STATE:    ON
ALARM;          DISCRETE ALARM #1

TIME & DATE:  10:41:30  23-MAY-01
ACTUAL VALUE:                          STATE:    OFF
ALARM;          DISCRETE ALARM #1

TIME & DATE:  10:43:04  23-MAY-01
ACTUAL VALUE:                  555
STATE:          LOW
ALARM;          NUMERIC ALARM #1

TIME & DATE:  10:43:31  23-MAY-01
ACTUAL VALUE:                  3000
STATE:          OFF
ALARM;          NUMERIC ALARM #1
```

NOTE: The Add New Alarm and Edit Alarm Details dialog boxes default to Log and Display enabled (check mark in box preceding feature).

8. Select the **Language** number and type in the **Alarm Text** (message) you want to display on the panel when the alarm is triggered. The message can be up to 34 characters in up to 9 different languages.
9. Click on **Add New Alarm #** or **Apply Changes Alarm #** button to save and exit the dialog box.



Export Alarms

Click on the **Export Alarms** menu item to write the alarms from your current (open) project to an Excel file or a CSV file.

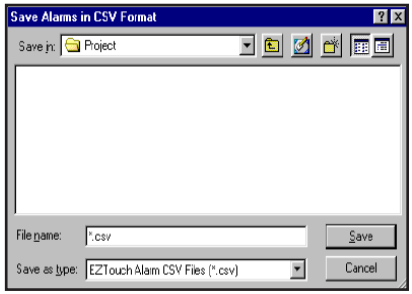
Comma delimited...

The CSV (Comma delimited or Comma-separated values) file format saves only the text and values as they are displayed in cells of the Alarm Database. All rows and all characters in each cell are saved. Columns of data are separated by commas, and each row of data ends in a carriage return. If a cell contains a comma, the cell contents are enclosed in double quotation marks.

Example of what a CSV file looks like opened in Notepad:

```
ALARM #,TAG NAME,ALARM STATE,LOW LIMIT,HIGH LIMIT,DISPLAY,LOG,PRINT,LANG #,ALARM TEXT
1,MOTOR RUNNING,ON,,,YES,YES,NO,1,The Motor is Running
2,MOTOR STOPPED,OFF,,,YES,YES,NO,1,The motor has stopped
3,OVER TEMP,,0,100,YES,YES,NO,1,Oven Temperature is over maximum
```

Click on **Comma delimited...** if you want to save the alarm database as a .CSV file. The window to the right will appear allowing you to name the file and navigate to the directory and folder where you want to save it.



To Excel...

Click on the **To Excel...** menu item to write the alarm from your current (open) project to a Microsoft Excel® file. The EZ Series Touch Panel Programming Software will open Microsoft Excel and write the alarms to an Excel book as shown below. Click on File >Save As in the Excel program and enter a name for the file. Click on the Save button to save the file under the name you have entered. Close Excel to return to EZ Series Touch Panel Editor Programming Software.

Book1

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	ALARM #	TAG NAME	ALARM STATE	LOW LIMIT	HIGH LIMIT	DISPLAY	LOG	PRINT	LANG #	ALARM TEXT			
2	1	MOTOR RUNNING	ON			YES	YES	NO	1	The Motor is Running			
3	2	MOTOR STOPPED	OFF			YES	YES	NO	1	The motor has stopped			
4	3	OVER TEMP		0	100	YES	YES	NO	1	Oven Temperature is over maximum			

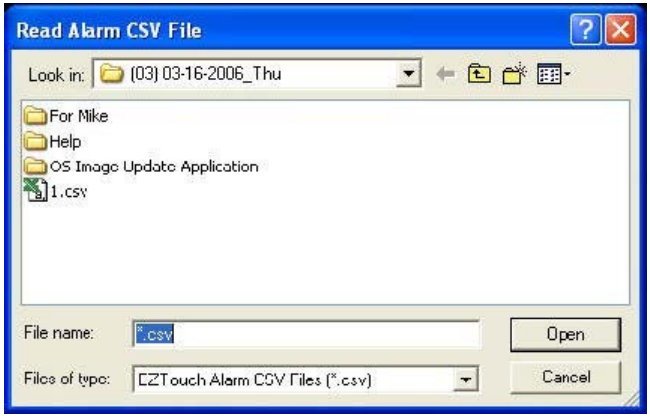
Import Alarms

Click on the Import Alarms menu item to import the tags into your current (open) project from a Microsoft Excel® (.xls) file or a .csv (Comma delimited or Comma-separated values) file format. Please be aware that the alarm will not be imported if:

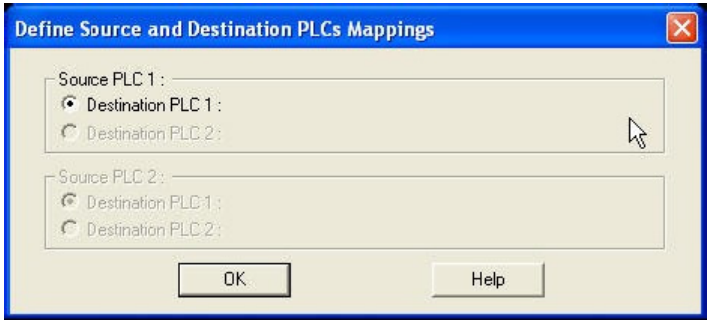
- the tag name doesn't exist in the database
- the existing tag's data type cannot accommodate low/high limits
- an alarm with the same number exists in the Alarm Database Comma delimited...

1. Click on Import Alarms> Comma delimited... to import alarms from a .CSV file. The following window will appear. Navigate to the folder where the file is stored.

2.



3. Click on the .csv file you want to import to highlight it and then click on the Open button. The following window will appear.

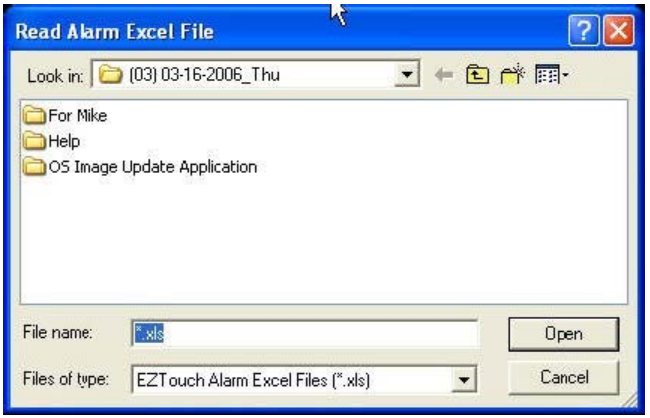


4. Click on the OK button to begin the import.

5. The file will be written to the Alarm Database. An Errors Log View will display letting you know if there were any problems importing the file into your current project.
6. Click on Setup>Alarm Database to view the database and make any corrections or changes.

Excel Format...

1. Click on the Import Alarms> Excel Format...menu item to select the Microsoft Excel® file where the Alarm Database resides. The following window will open. Navigate to the file you want, click on it to highlight it and then click on the Open button.

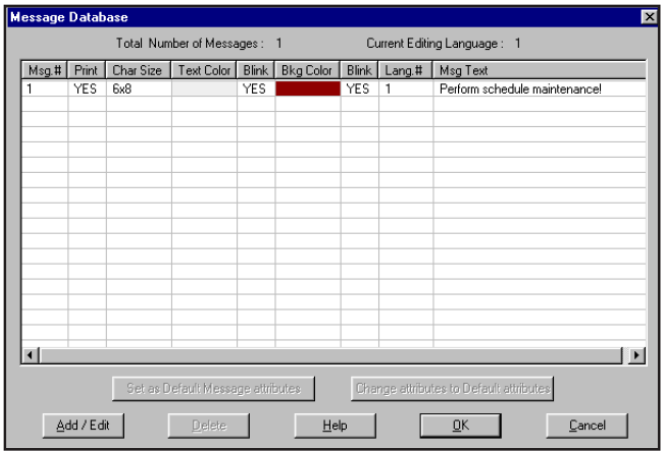


2. A window will open showing you the status of the import process. When finished importing the Alarms, you will receive a message telling you how many Alarms were successfully imported.
3. The Error Log View will appear to let you know if there were problems in the import process or if the Alarms already exist in the project. Open the Alarm Database to make any changes. (You may also open the .csv or Excel file, make changes, and then try to import again.)

NOTE: The Message Database is used by the Lookup Text Object. For information on how to use the Message Database in a Lookup Text Object, see Chapter 4, Lookup Text, page 79.

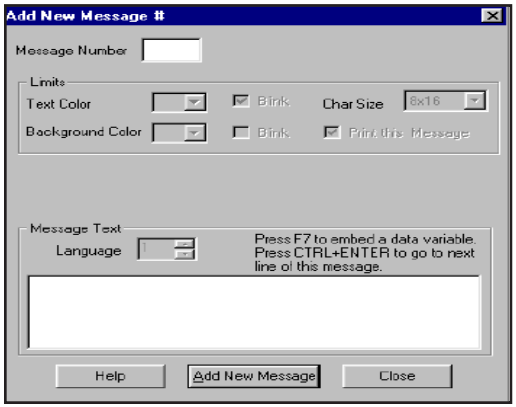
Message Database

Here you may create up to 999 messages (limited by available memory). Each message may be up to 200 characters and you can choose various message attributes such as, **Character Size**, **Text Color**, **Background Color**, **Blink** (for text and/or background), and **Language**. The Message Database is used by the **Lookup Text** object to display a message on the panel. The value for the message is assigned in the Tag associated with a **Lookup Text** object.

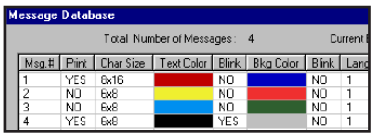


To create a new message:

Add New Message Details Dialog Box



Colors you have selected for the message text and background display right in the message database window!



1. Click on the **Add** button. The following **Add New Message** dialog box will appear.
2. Select the **Message Number** using the UP/DOWN arrows.
3. Select the **Text Color** by clicking on the DOWN arrow to view the color palette. Click on the box in front of **Blink** if you want the text in the message to blink on and off.

4. Select the **Background Color** and whether or not you want the background of the message to **Blink**.
5. Select the Character Size of the Message Text by clicking on the down arrow next to the **Char. Size** field to choose from the available choices.
6. Click on the box in front of **Print** if you want the message to print to a printer anytime it is displayed on the Panel. The Message print out will look similar to the following:

Message Print Out

```
TIME & DATE:  8:18:57    28-MAY-01
MESSAGE: THIS IS MESSAGE NO. 1 THIS IS MESSAGE NO. 1

TIME & DATE:  8:25:47    28-MAY-01
MESSAGE: THIS IS MESSAGE NO. 1 THIS IS MESSAGE NO. 1

TIME & DATE:  8:25:51    28-MAY-01
MESSAGE: THIS IS MESSAGE NO. 2 THIS IS MESSAGE NO. 2

TIME & DATE:  8:25:53    28-MAY-01
MESSAGE: HI!

TIME & DATE:  8:25:55 28-MAY-01
MESSAGE: BYE!

TIME & DATE:  8:25:58    28-MAY-01
MESSAGE: THIS IS MESSAGE NO. 1 THIS IS MESSAGE NO. 1
```

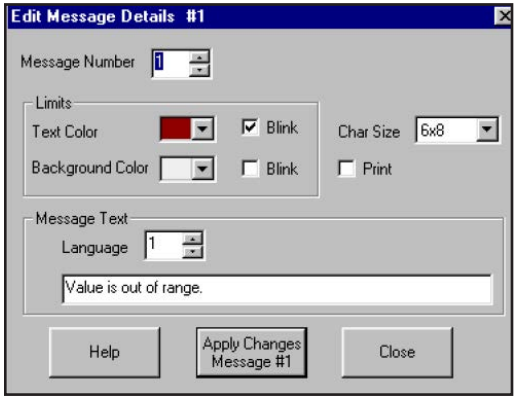
NOTE: To set the printer parameters, see page 146, Project Attributes, Printer tab. To set the panel COM1 port to "Printer," see Appendix D.

7. Under **Message Text**, select the **Language** for the message (up to 9) and then enter the text for the message. When finished, click on the **Add New Message #** button.

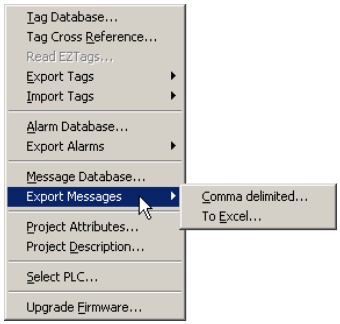
To edit an existing message:

1. Click on the message in the **Message Database** list to highlight it and then double click or click on the **Add** button. The following dialog box will appear.

Edit Message Details Dialog Box



2. Make changes and then click on the **Apply Changes Message #** button. The changes will be saved to the Message Database.



Export Messages

Click on the **Export Messages** menu item to write the messages from your current (open) project to an Excel file or a CSV file.

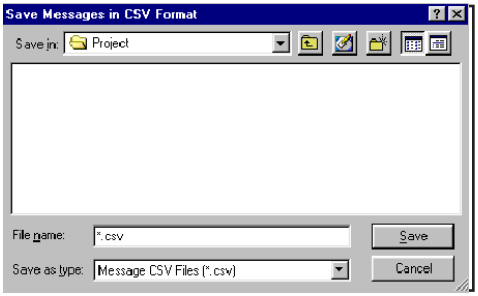
Comma delimited...

The CSV (Comma delimited or Comma-separated values) file format saves only the text and values as they are displayed in cells of the Message Database. All rows and all characters in each cell are saved. Columns of data are separated by commas, and each row of data ends in a carriage return. If a cell contains a comma, the cell contents are enclosed in double quotation marks.

Example of what a CSV file looks like opened in Notepad:

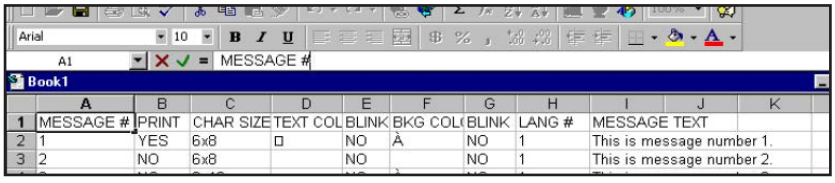
```
1,YES,6x8,144,NO,3195072,NO,1,This is message number 1.
2,NO,6x8,49152,NO,15765504,NO,1,This is message number 2.
3,NO,8x16,0,NO,12632256,NO,1,This is message number 3.
4,NO,6x8,15728640,YES,12632304,YES,1,This is message number 4.
```

Click on **Comma delimited...** if you want to save the Message Database as a .CSV file. The following window will appear allowing you to name the file and navigate to the directory and folder where you want to save it.



To Excel...

Click on the **To Excel...** menu item to write the messages from your current (open) project to a Microsoft Excel® file. The EZ Series Touch Panel Editor Programming Software will open Microsoft Excel and write the messages to an Excel book as shown below. Click on File >Save As in the Excel program and enter a name for the file. Click on the Save button to save the file under the name you have entered. Close Excel to return to EZ Series Touch Panel Editor Programming Software.



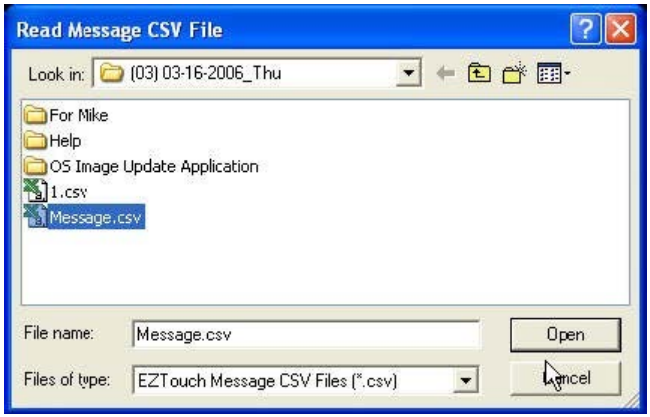
	A	B	C	D	E	F	G	H	I	J	K
1	MESSAGE #	PRINT	CHAR SIZE	TEXT COL	BLINK	BKG COL	BLINK	LANG #	MESSAGE TEXT		
2	1	YES	6x8	□	NO	À	NO	1	This is message number 1.		
3	2	NO	6x8		NO		NO	1	This is message number 2.		

Import Messages

Click on the Import Messages menu item to import messages into your current (open) project from a Microsoft Excel® (.xls) file or a Comma delimited (.csv) (Comma-separated values) file format.

Comma delimited...

1. Click on Import Messages> Comma delimited... to import messages from a .CSV file. The following Read Message CSV File window will appear. Navigate to the folder where the file is stored.



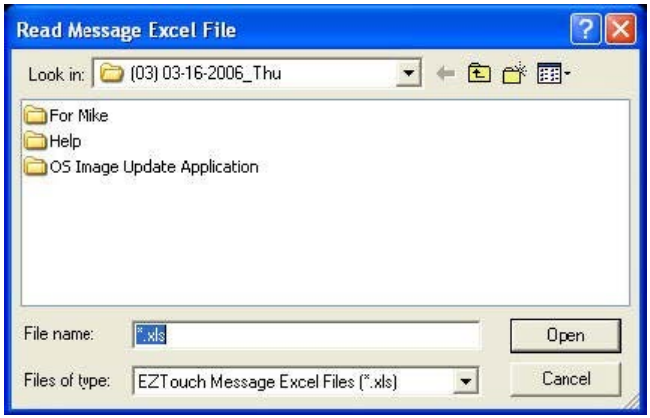
2. Click on the .csv file you want to import to highlight it and then click on the Open button. The following dialog box will appear. Click OK, if the first row in the .csv file contains header information. If it does not, click in the box to remove the check mark and then click OK. (If the box is not checked, and the first row does contain the header information, click in the box to place a check mark, and click OK.)

3. The file will be written to the Message Database. To avoid overwriting or replacing an existing message(s), a dialog box will appear providing you with import options.

4. Click on Replace if you want to replace the existing Message No. 1 with Message No. 1 in the imported .csv file. Click on Do Not Replace if you want to keep the existing Message No. 1. Click on Replace All if you want to overwrite/replace all Messages, or Do Not Replace Any, if you want to stop importing the messages.
5. Open the Message Database to view the imported messages.

Excel Format...

1. Click on the Import Messages> Excel Format...menu item to select the Microsoft Excel® file where the Message database resides. The following Read Message Excel File window will appear. Navigate to the file you want, click on it to highlight it and then click on the Open button.



2. The file will be written to the Message Database. To avoid overwriting or replacing an existing message(s), a dialog box will appear providing you with import options.
3. Click on Replace if you want to replace the existing Message No. 1 with Message No. 1 in the imported .xls file. Click on Do Not Replace if you want to keep the existing Message No. 1. Click on Replace All if you want to overwrite/replace all Messages, or Do Not Replace Any, if you want to stop importing the messages.

4. Open the Message Database to view the imported messages.

Project Attributes

Project Attributes represent the attributes that contribute to the configuration of the panel. Attributes listed under the General, Printer, Passwords, Clock, Panel to PLC, PLC to Panel, and Language tabs are provided below.

Under the **General** tab, you will enter the following attributes:

Power-Up Screen

This is the screen that will be displayed after the unit completes its power-up sequence. If the initial value of the "Switch to Screen Number" (from PLC) is anything but zero, this entry will be ignored. Range is 1–999.

Alarm Display Time (sec.)

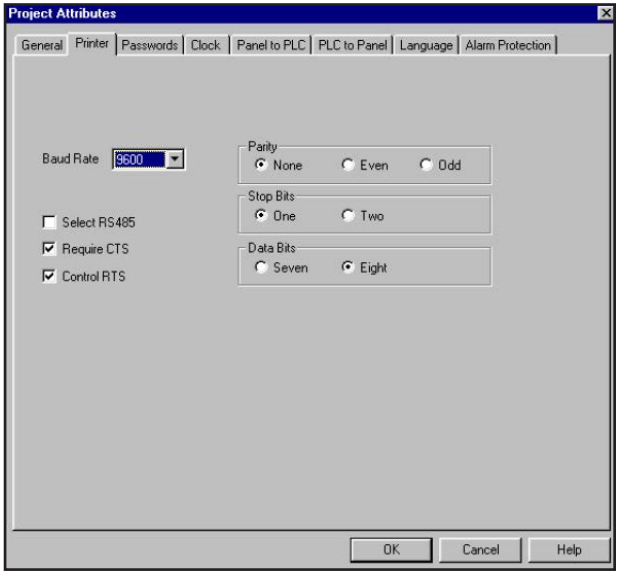
Specifies the length of time in seconds (1 to 60) that each alarm will remain displayed before the next alarm, in the circular queue, is displayed.

Alarm List Size

If two or more alarms are active, they are placed in a circular queue and displayed one after another. This parameter specifies the length of the queue. Range is 1-99. In other words, this is the maximum number of alarms that will be on at one time. This is not the number of alarm inputs that are monitored. See the section on alarms for more information.

Display Saver (30-1500 minutes) 0 = Disabled

NOTE: To set the panel COM1 port to "Printer," see Appendix D.



The length of time in minutes that passes before the screen saver is activated. The timer is reset when a new screen is displayed, or when the screen is touched or an alarm is activated.

Default Language

This value is the language that the panel will use when it powers up. Choose from Languages 1 to 9. Languages are programmed when creating the object text or in the Message Database. Languages are named under the Language Tab.

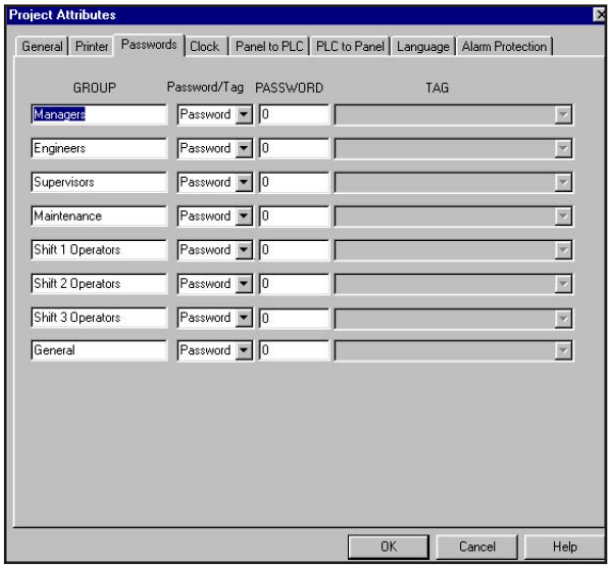
To change the active language when in the EZ Series Touch Panel Editor Programming Software, click on **Edit > Current Editing Language**.

Display large keypad on panel (Defaults to smaller one)

Select this option if you are using an 8-, 10-, or 15-inch panel and you want the popup keypad to take up the entire screen area. This option is grayed out (not available) if you have select a 6-inch panel.

Enable Beeper

When the beeper is enabled, the beeper will sound when the screen is touched on an active area. If the beeper is disabled, the beeper never



sounds. Select Yes or No.

Under the Printer tab, you will make selections for the following attributes:

Baud Rate

Select baud rate to match Printer. Select from 1200, 2400, 4800, 9600, 19200, or 38400. Default is 9600.

Parity, Stop Bits, Data Bits

Select the corresponding attributes of the printer.

Select RS485

This allows you to select RS-485 as the communication protocol. If you are connecting RS-232 or RS-422, do NOT select this feature. Click on the box to place a check mark, if you want to enable RS-485.

Require CTS
Select this to match the printer.

Control RTS
Select this to match the printer.

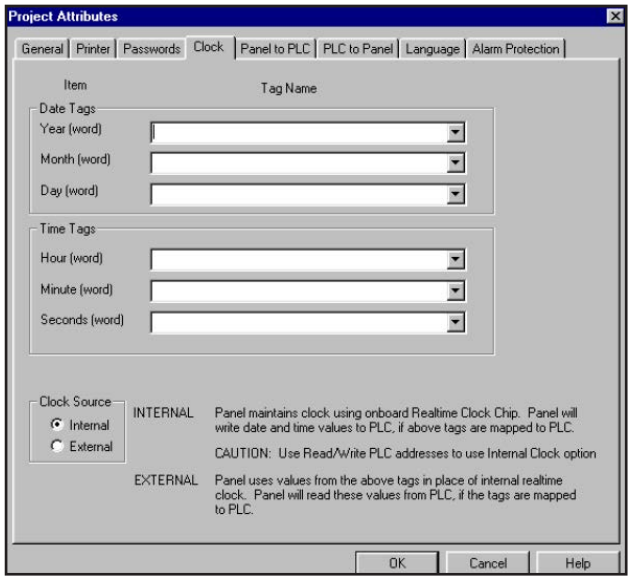
NOTE: Leading Zeroes are ignored in passwords. In other words, if you enter a password of 000455, the password will be 455.

Under the Passwords tab, you can make the following selections:
There are eight groups to which you may assign Passwords. Passwords restrict a user from using objects, such as push Buttons, Numerical Entry, etc. Passwords can also be used with Change Screen buttons to restrict access to other screens. Select from the following Group headings, or enter your own.

GROUP

- Managers
- Engineers
- Supervisors
- Maintenance
- Shift 1 Operator
- Shift 2 Operator
- Shift 3 Operator
- General

All “touch” objects allow you to select the security or Protection level of



those that have access to that screen. A numerical keypad will pop up when the touch object is pressed, prompting the user to enter a password. Select Password or Tag under the **Password/Tag** heading. If you select Tag, the password value will be stored in the PLC. If you select Password,

you will enter the password here. Passwords are entered by the operator with a popup keypad.

PASSWORD
A 1-10 digit number is assigned here that the user must enter to perform protected functions for a particular Group level. A password is an internal value stored in the panel.

TAG
Tag names are assigned to PLC registers that hold the passwords. This allows you to change the codes by writing new code values in the assigned PLC registers. It also gives you the ability to design a screen that allows a Supervisor to change security codes from the touch screen. ***Only use positive values when assigning tag values.***

*NOTE: If using **Internal**, the tag address string must use a READ/WRITE register in the PLC. The PLCs use READ ONLY registers for their internal clock/calendars and cannot be written to. If using **External**, be sure to use the correct PLC addresses!*

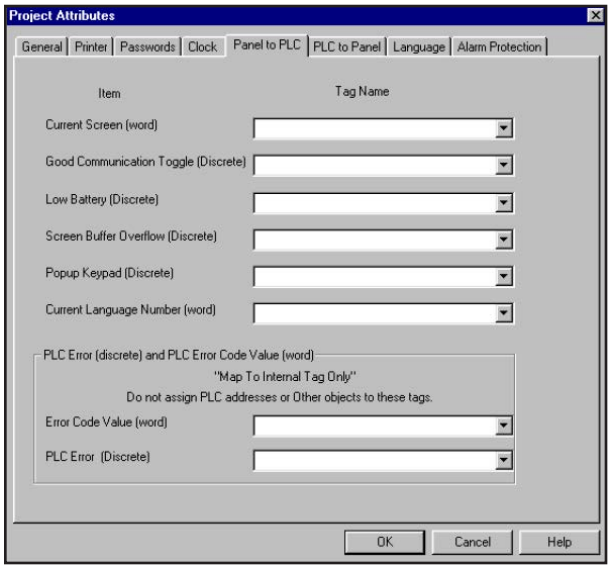
Under the **Clock** tab, you will select the following attributes:

Date Tags:

Year (word): Tag for the location that the panel sets with the year (0–99).

Month (word): Tag for the location that the panel sets with the month (1–12).

Day (word): Tag for location that the panel sets with the day (1–31).



Time Tags

Hour (word): Tag for internal location that the panel sets with the hour (1-12 or 0-23 depending on hour mode).
Minute (word): Tag for internal location that the panel sets with the minute (00–59).
Second (word): Tag for internal location that the panel sets with the second (00–59).

Clock Source

If you select **Internal**, the panel maintains clock using onboard Real-Time Clock chip. The panel will write data and time values to the PLC, if the tags are mapped to the PLC. **(SEE NOTE TO THE LEFT.)**

If you select **External**, the panel uses values from the tags in place of internal Real-Time Clock. The panel will read these values from the PLC if the tags are mapped to the PLC. **(SEE NOTE TO THE LEFT.)**

NOTE: Map to internal tag only — DO NOT assign PLC addresses or other objects to these tags:

Under the Panel to PLC tab, you will enter the following attributes:

Current Screen (word)

Tag for the register that the panel writes to, indicating the screen number that is currently displayed on the panel.

NOTE: The steps necessary to program your panel to monitor the PLC for errors and trigger an alarm are provided in the Troubleshooting Appendix A (see "How do I Log and Display PLC Error Messages?").

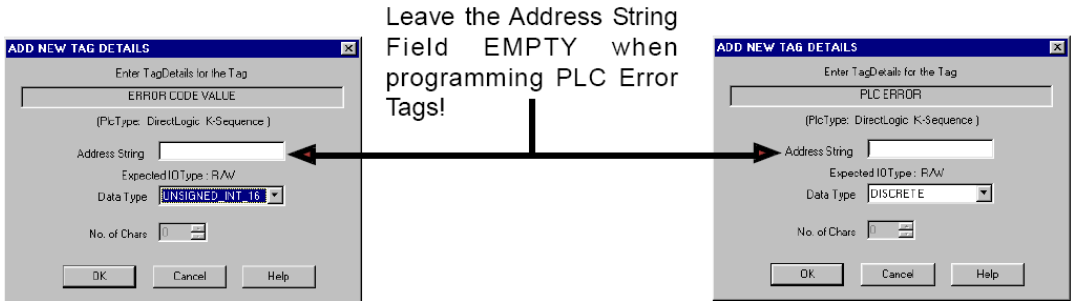
Good Communication Toggle (Discrete)

Watchdog — this bit is toggled every 5 seconds allowing the PLC to determine if the panel is communicating.

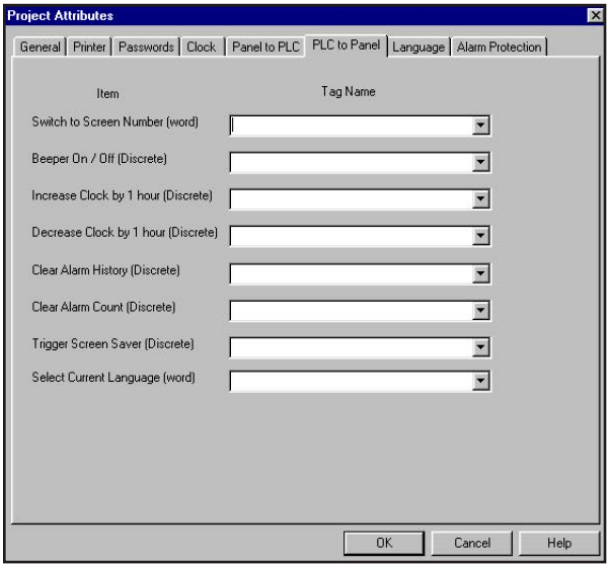
Low Battery (Discrete)

Indicates battery for system RAM needs to be replaced. Cleared on power-up, set when low battery is detected.

Screen Buffer Overflow (Discrete)



Indicates that the current screen and its objects and graphics contain



more data than the screen buffer can hold. Set/cleared when switching screens.

Popup Keypad (Discrete)
Indicates that the Popup Keypad is active on the panel screen.

How do I switch screens from a PLC?

Current Language Number (word)
Shows the value (1–9) of the current language being used on the screen.

PLC Error (discrete) and PLC Error Code Value (word)

Error Code Value (word)
Tag for internal location that the panel writes values to indicating which PLC errors have occurred in the unit. The values are in decimal only. Convert them to Hex to find the PLC Error Code Value. PLC Error messages are listed in the Appendix A, PLC Error Messages, and in the programming software help under the PLC Help topic, Driver Errors.

PLC Error (Discrete)
Tag for internal location where the panel sets a bit to indicate that a PLC error has occurred.
Under the PLC to Panel tab, you will enter the following attributes:
Under this Project Attributes tab, you will enter a tag to an internal panel location. These locations can be written to by the PLC.

Switch to Screen Number (word)

This tag can be written to by the PLC to display a screen on the panel. This will allow the PLC to change screens at anytime. A zero (0) placed in the tag will return the customer to the previous screen.

How to Switch Screens from a PLC:

1. Create a project or open an existing project that contains multiple screens.

2. From the Main Menu Bar select **Setup >Project Attributes** and click on the **PLC to Panel** tab.

3. For the item labeled "**Switch to Screen Number**" enter a tag for this item. (Note: Must be a word type tag and the data type for this tag should be unsigned decimal or BCD.)

4. Save the project and then write the project to your Panel.

5. When communications between the PLC and the Panel are established, the PLC can control the screen that will be displayed on the Panel.
   a. In the PLC write a value to the register that was assigned to the "**Switch to Screen Number**" tag. The value should correspond to the screen number you wish to display. (Note: this attribute is value oriented not bit oriented.)

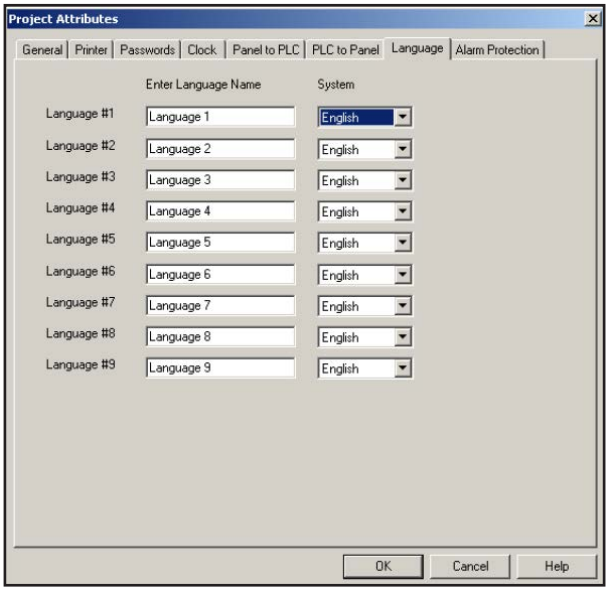
   b. If a value is written that does not correspond to a valid screen number, the displayed screen will not change or give any indication that the value was invalid.

   c. Writing a value of zero to the "**Switch to Screen Number**" tag will change the screen displayed on the panel to the previously displayed screen.

   d. Writing the same value to the "**Switch to Screen Number**" tag will be ignored.

   For Example: Assume the PLC wrote a 5 to the "Switch to Screen Number" tag and the Panel is displaying screen 5. If the panel screen is changed using a Change Screen Object to change to screen 6, writing a 5 to the "Switch to Screen Number" tag a second time will be ignored. The panel will not respond until it sees a new value in the "Switch to Screen Number" tag.

Beeper On/Off (Discrete)



NOTE: For an operator to change the language on a configured panel, see System Objects, Select Language.

NOTE: For ANSI (and ASCII) Character Codes, see Appendix B. ANSI Character Codes can be used to insert Spanish characters into text.

To insert an ANSI Character, refer to the list in appendix b. You must press and hold the ALT key, and, using the numeric keypad on your keyboard, enter a "0" plus the 3-digit code from the list.

This tag can by written to by the PLC to turn on the panel beeper. This will allow the PLC to turn on the panel beeper at anytime. (Beeper is activated by PLC and not by a press to a touch cell.)

Increase Clock by 1 hour (Discrete)
This allows the PLC to increment the panel system clock by 1 hour.

Decrease Clock by 1 hour (Discrete)
This allows the PLC to decrement the system clock by 1 hour.

Clear Alarm History (Discrete)
This allows the PLC to clear the panel alarm history.

Clear Alarm Count (Discrete)
This allows the PLC to clear the panel alarm count.

Trigger Screen Saver (Discrete)
This allows the PLC to trigger the panel screen saver.

Select Current Language (word)
This allows the PLC to select the current language (1–9).

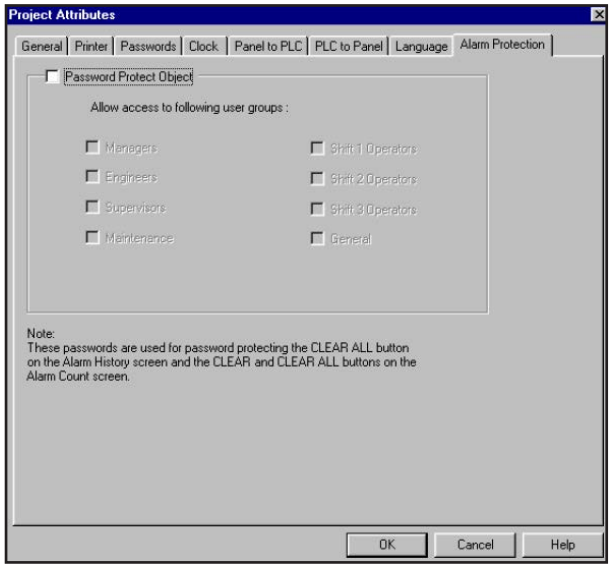
Under the **Language** tab, you will assign the following attributes:
EZ Series Touch Panel supports Multiple Languages. Language Preference allows you to select and view different versions of text strings while you

Hello...
Hola...
Guten Tag...

are working in the programming software. Each version can be created for a different language (up to 9) for each Object where text is displayed. Enter the name of the Language in the fields next to the Language number. Select the **System Language** (English or Spanish) for the language used for System Messages and Prompts.

The Default Language is the language to be used by EZ Series Touch Panel on power-up.

A brief tutorial is provided here to show you how the Multi-Language Support Feature works. If, for instance, you are creating a Push Button Object, and you want the text within the button to say “Hello” in Language Number 1, “HOLA” (Spanish equivalent) in Language Number 2, and “GUTEN TAG” (German equivalent) in Language Number 3, do the following:



1. Click on the Button Object, and then click on the General tab, if necessary.

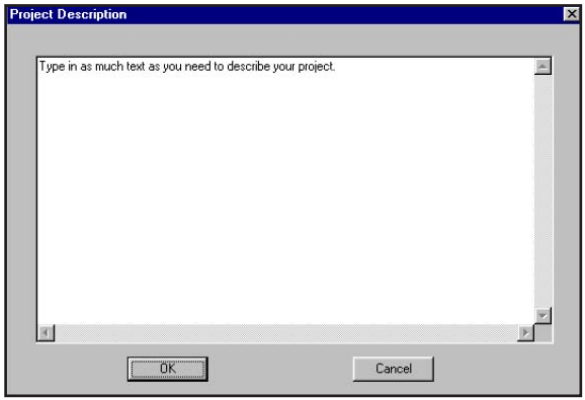
2. In the **Language Number** box type in “1” (or click on arrows to scroll up or down), then type “**HELLO**” in the text box. Go back to Language Number box and type in “2”, then type “**HOLA**” in the text box, and repeat for “3” and “**GUTEN TAG**.”

3. Click on **OK**.
4. The next time you type in **Language Number** 1, 2 or 3, the corresponding text string will come up in the text box.

5. To view the different languages for the **Button** object text, click

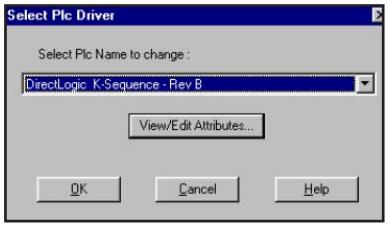
NOTE: This does not effect the Alarm History Object.

on **Edit** on the **Main Menu Bar** and select **Current Editing Language...**, and then enter the "Working" language number that you want to view in EZ Series Touch Panel Editor Programming Software. The text in your Button Object will change accordingly. Keep in mind that this is for viewing only while working in the EZ Series Touch Panel Editor Programming Software. To set the language preference that will be displayed on the panel, you must select the preferred Language Number as the **Default Language**



while programming your **Project Attributes**.

Under the Alarm Protection tab, you can make the following selections: There are eight groups to which you may assign Passwords. Passwords restrict a user or group of users from clearing the Alarm History or Alarm



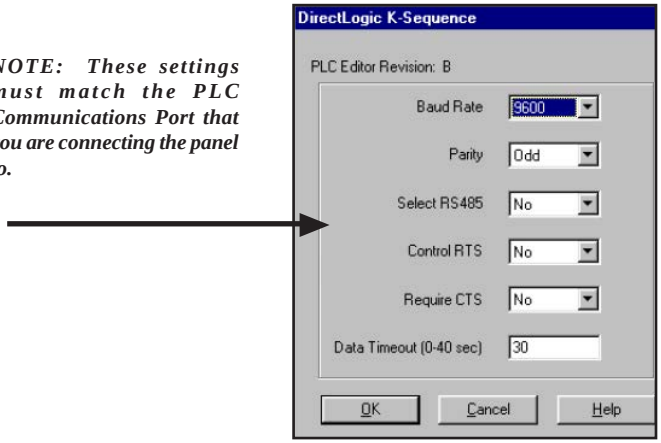
Counts. See note on dialog box, above. Select from the following Group headings, or enter your own. To program passwords to the groups see Passwords feature beginning on page 183.

GROUP

- Managers
- Engineers
- Supervisors
- Maintenance
- Shift 1 Operator
- Shift 2 Operator
- Shift 3 Operator
- General

Alarms allow you to select the security or Protection level of those that can clear alarm history or counts. A numerical keypad will pop up when the Clear or Clear All buttons are pressed on the Alarm History screen or the Alarm Counts screen, prompting the user to enter a password. Passwords are entered by the operator with the popup keypad.

NOTE: These settings must match the PLC Communications Port that you are connecting the panel to.



Project Description

Enter text here to describe your project. You may enter up to 400 characters. Click on the **OK** button when you are finished.

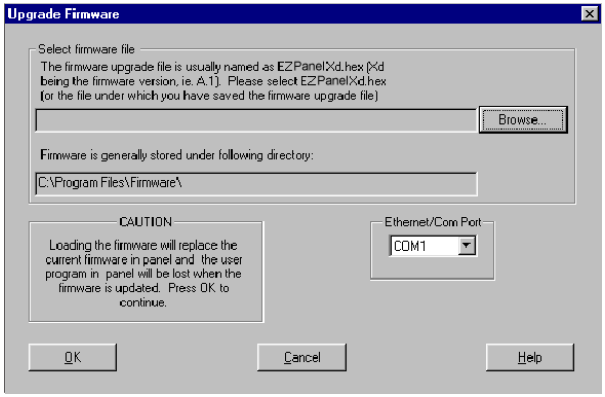
Select PLC

Click on the down arrow to view the available PLCs. Select the type/protocol you are using. If you want to View or Edit the PLC Attributes, click on the **View/Edit Attributes** button. Click on **OK** to save selection.

The dialog box shown below appears when you click on the **View/Edit Attributes** button. It is specific to the type PLC and protocol you have selected in the previous dialog box (in this case, DirectLogic K-Sequence). You may change the attributes from this dialog box. Click on **OK** to save your changes or **Help** to view the help topics available for that particular PLC.

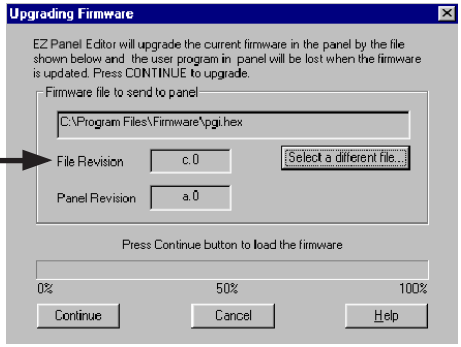
Upgrade Firmware

There may be occasional upgrades to the EZ Series Touch Panel



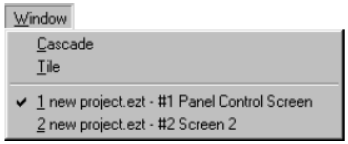
internal software, also referred to as the Exec or Firmware. ***(Check the EZAutomation website periodically for information about software and firmware upgrades.)***

Check File Revision number against Panel Revision number.



CAUTION: Existing programs that are saved to Flash memory must be re-saved to Flash after upgrade. When upgrading firmware, YOU MUST write the program to the panel and save the program to FLASH

Window Menu



Cascade

Click here to view open screen files in the window. Screens will cascade down window, overlapping each other, but with their title bars in view. This is helpful when you are making changes to two or more screens at the same time. Click on the title bar of one of the screens to bring it to the front. The title bar is grayed out in screens that are not currently active.

Tile

Click here to view open screen files in the window. Screens will be arranged within the window. This is helpful if you want to copy or cut and paste objects or drawings between screens. The title bar is grayed out in screens that are not currently active

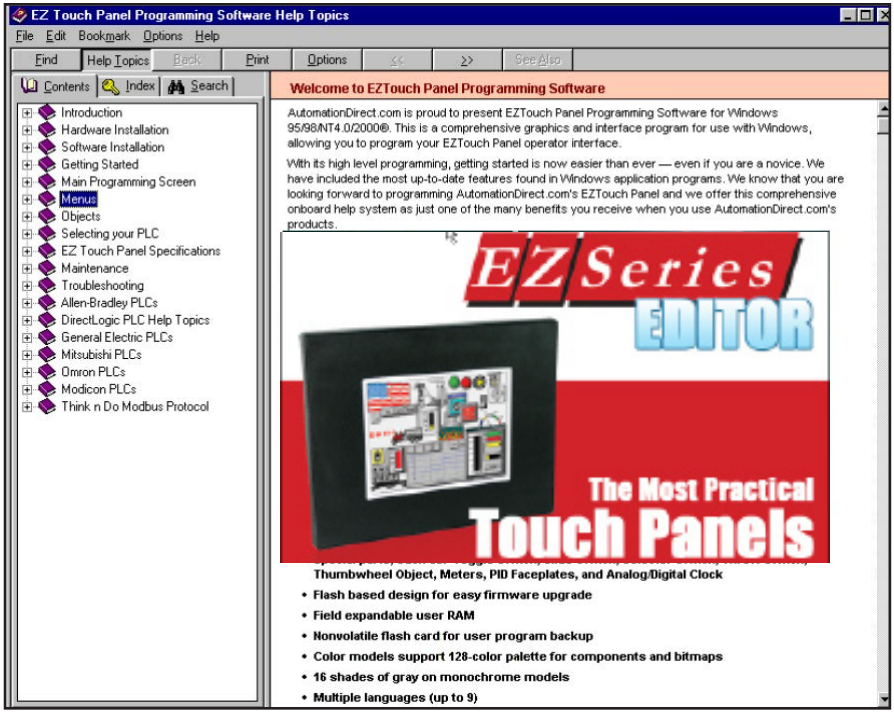
1 new project.ezt - #1 Panel Control Screen
2 new project.ezt - #2 Screen 2

This is a list of the project screens that are currently open. Click on a screen in this list to bring it into view. A check mark will appear in front of the active screen in this list.

Help Menu

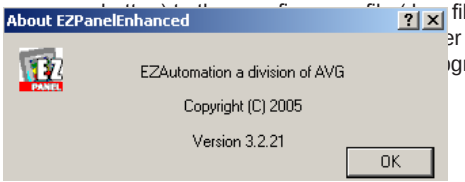
using Panel > Flash > RAM to Flash.

To Upgrade Firmware:



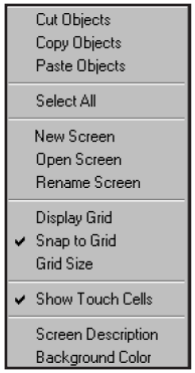
1. Back up the user program currently stored in the panel and save to disk or Flash option card.

2. Click on **Upgrade Firmware** and navigate (click on **Browse** file).
er **Ethernet/Com Port** and
grade. A status bar will let



Right Click Menus

Right click while cursor is on programming screen

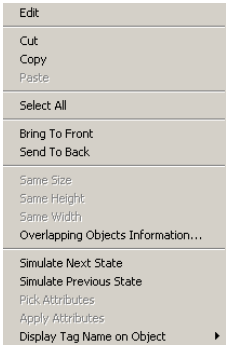


Some functions are accessible with a click on the right mouse button. With your cursor anywhere on the programming window, click the right mouse button. The menu to your left will appear. Some items may be grayed out (not available), depending upon the objects you have selected.

From this menu you can:

- Cut, Copy, or Paste selected Objects (you must select more than one object)
- Select All objects on screen
- Create New, Open an existing, or Rename a Screen
- Change the screen magnification with the Zoom control
- Display Grid, activate Snap to Grid, or change Grid Size
- Show Touch Cell grid
- Enter or Change the current Screen Description
- Change Background Color of the screen
- Provides information about Overlapping Objects on the current screen and allows you to make changes

Right click while cursor is on an object

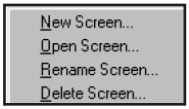


The functions on the menu to the left are accessible when you have one or more objects selected on a screen and click the right mouse button. Some items may be grayed out (not available), depending upon the objects you have selected.

From this menu you can:

- Edit an object
- Cut, Copy, or Paste an object
- Select All objects on current screen
- Bring selected object(s) to the Front of the screen
- Send selected object(s) to the Back of the screen
- Make selected objects the Same Size, Height, or Width (you must select more than one object). All selected objects will be sized to the ***first object*** you select
- Provides information about Overlapping Objects on the current screen and allows you to make changes
- Simulate the Next or Previous State of an object
- Pick and Apply Attributes
- Display Tag Name or Address on an object

Right click while cursor is in the Project Screens Explorer View window

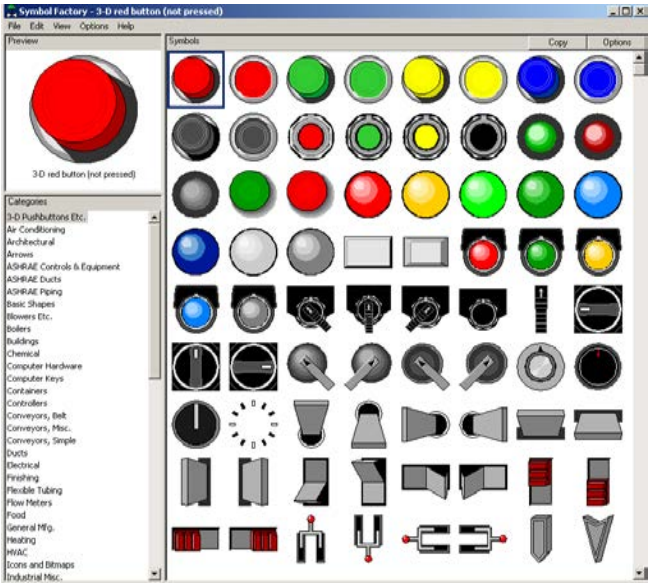


The functions on the menu to the left are accessible when you right click the mouse button while in the Project Screens Explorer View window.

- Add a New Screen to your project
- Open an existing Screen
- Rename a Screen from your project
- Delete a Screen

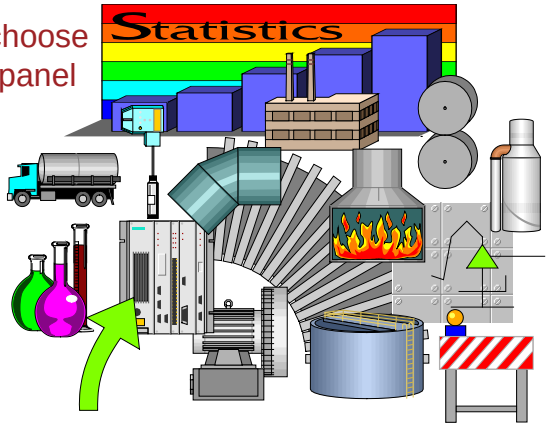
Symbol Factory®

Symbol Factory® is a product we have included in our software for your use in creating screen graphics. The Symbol Factory is a library of over 4,000 symbols for industrial automation, including pumps, pipes, valves, tanks, mixers, motors, ducts, electrical symbols, flow meters, material handling, sensors, PLCs, transmitters, and ISA symbols. It is accessible from the **Draw > Static Bitmap** and **Objects > Dynamic Bitmap** menus. Once opened, click on Symbol Factory Help menu item for Help.



NOTE: Go back to page 170 for instructions on how to size a symbol bitmap before or after importing onto a screen, or see Symbol Factory Help.

Over 4000 Symbols to choose from — customize your panel screens!



Index

Symbols

3 Easy Steps Tool Bar 166
16-bit 44
16-bit register 81
24 Volt Power Supply 3
32-bit 44
+ (ADD) 134
.bmp 120
.emf 120
.EMF 186
.ezt 19
– (SUBTRACT) 134
.wmf 120
.WMF 186

A

About EZPanel
accumulator data 62
Actions Toolbar 122
Activate 82
Activate Screen Saver
  Label 108
  Text 108
ACTUAL VALUE. A-13
Actuator Type 126
Actuator Types 22
Add 133
Add/Edit Button
  Tag Database 199
Add/Edit Message 130
Add Image 47
Add New Alarm Dialog Box 210
Add New Tag Details ix,?199
Address String 47
  connecting panel to multiple PLCs 109
  empty field A-8
Adjust Contrast 110
  Digit Format 109
  Label 9
Air Composition 9
Alarm
  Bit 104
  Display Time (sec.) 220
  History 227
  print outs from Panel 211
Alarm Count button A-11
Alarm Database A-7,?A-8,?A-9
Alarm History 230,?A-10
  button A-10,?A-11
  Details A-13
  screen A-11
Alarm History Object 104
  Details 105
  Display Screen 104
  Label 105,?118
  Text 89
Alarm List Size 220
Alarms
  Print D-3
  Protection 230
Alarms Tab 222
algorithm 84
Align 175
Allen-Bradley PLC Communications Setup C-3
Allen-Bradley PLCs
  Data Highway Plus Protocol C-10
  Remote I/O Protocol C-12
Allow Stretching 32
alphanumeric 82
  keypad 87
alphanumeric entry 44
Analog Clock 142
analog gauge 98
application 116
Application Name 178
Apply Attributes 208
Apply Changes Alarm # 212
Apply Changes Message # 216
Arc 142
ARROW keys 199
ASCII 99
ASCII character command 116

B

Bar Graph 92
  Color 93
Bar Graph Object 92
  Digital Display Tab 94
  Format 93
    numbers 94
  Fractional Digits 94
  Label 92
  Tag Name 92
Basic Objects Tool Bar 163
battery 224
BCD 44
Beeper On/Off 227
Bipolar 93
bit 44

bitmap 120
Bitmap 120,?186
  sizing.?*See* Sizing a Bitmap in Symbol Factory
Bitmap Button 125
Bitmap Button Object 126
  Actuator Type 122
  Edit a Bitmap 125
  Label 126
  On Bitmap, Off Bitmap 125
  Tag Names 120
Bitmap Objects 164
Bitmap Objects Tool Bar 9
bitmaps 113
Bit Number 44
bits 33
Bits are represented
  in Decimal or Octal systems 25
Bits are represented in
  Decimal System, Octal System 189
Boot Software 46
Browse 47,?133
Button object 46
Button Object 46
  Actuator Types 47
  Button Style 47
  Label 47
  On/Off Text 46
  Place Button 41

C

cable A-5
calendar 9
carriage return 204
Cascade 232
CAUTION
  removing RAM or Flash card 230
  Upgrade Firmware 231
CD ROM Drive ix
CE mark ix
CE Test Standard #EN55011 119
Change Message Attributes 36
changes 102
Change Screen 226
Change Screen Object 102
  Go To Screen 102
  Label 102
  Style ix
Changing Screens
  from a PLC 225
Characters B-2,?B-5
character string 199
Circle 185
Cleaning 85
Clear Alarm Count 227
Clear Alarm History 227
Clear Program 190
clock 190
Clock 85
Clock Object 85
  Analog Clock 85
    Color 86
    Label 86
  Digital Clock 86
    Date 86
    Label 49
    Options 89
Close Project 170
codes 46
color band ix
color palette 9
COM1 button D-2
COM Configuration 192
Comma delimited 204
Comma delimited... 217
Comma-separated values 204
Communication Errors (Cxx_x) A-71
Communications
  cable A-5
  from EZ Touch to Computer A-5
  ports ix
communications between the PLC and panel A-7
communications port receptacle 35
compatible/incompatible chemicals and compounds 22
COM port 233
COM Port 192
configuring your first screen 4
Connecting Panel to Multiple PLCs, addressing 109
context sensitive onscreen help 99,?187
Contrast 44
controlled variable in the process 99
control logic 44
control output value 127
control sequence 122
Copy 175
Copy from Clipboard 172
Copying Tags Screen 171
Copy Screen 211
corrosive gases 176
Crop 217
CSV file 204
CTS Switch C-25

Current Editing Language 228
Current Language Number 225

D

databases 36
Data Format 134
Data Highway Plus C-10
Data Highway Plus Models 8,?29
data table 44,?29
data tag 87
data type 87
data value 116
data value range 87
Data values 44
Decimal 129
decimal points
  controlled by tag 64
Decimal point Tag Name 64
Decrease Clock by 1 hour 227
decrement
  value 133
DEFAULT image 130
Default Language 220,?228
DEFAULT Message 114
Default Message Attributes 119,?176
Default Tag Data Type 176,?74
Delete 176
Delete Screen 181
Demo Button 24
Demo Indicator Light 22
Demo Numeric Display 30
Demo Numeric Entry 19
Demo Project 32
Demo Project 1 77
description of process or condition 50
Description (Screen) 183
design 64
design changes 44
design screens 161
Details 81,?129
DETAILS button A-12
detect a PLC error A-7
Diagnostics 192
Digital Clock 81
Digital Display 85
  Justification 90
Digits 94
Dimensions 81
DirectLogic PLC Communications Setup C-16
DirectSoft
  importing and exporting tags 205
DirectSoft configuration software C-16
Discrete 82
Display 190
Display a blank bitmap 129
Display a blank message 113
Display an error message 113,?127
Display Blank A-6
Display Frame 82
Display Grid 182
display images
  on panel 128
Display images based on Bit Number 129
Display images based on Image Number 129
Display messages based on Bit Number 113
Display Messages based on Message Number 113
Display Saver 108
display tag character values 129
Display Tag Name or Address 234
Display the last displayed bitmap (ignore the new 113
Display the last displayed message (ignore the new
    93
Divisions 165
Draw
  Frame 187
Draw Horizontal/Vertical 185
Draw Menu 185
Draw Tool Bar 121
Driver Errors
  ALLEN-BRADLEY PLCs A-15
    Data Highway Plus A-19
    Micrologix/SLC 500 (DF1 Full Duplex) A-18
    Micrologix/SLC 500 (DF1 Half Duplex) A-16
    Micrologix/SLC 500 DH-485/AIC A-15
    PLC5 with DF1 Protocol A-17
    Remote I/O A-21
  DirectLogic PLCs A-23
    DirectNet Protocol DL330, DL340 A-28
    DirectNet Protocol (except DL330/340) A-26
    K-Sequence Protocol A-25
    ModBus (Koyo Addressing) RTU Protocol A-27
  EZ-Ethernet
  General Electric PLCs A-29
  GENERIC DEVICENET I/O A-39
  MITSUBISHI PLCs A-30
  Modicon PLC (MODBUS RTU Protocol) A-31
  OMRON HOST LINK PLCs A-32
  SIEMENS S7 MPI ADAPTER
Driver Memory 122
Dynamic Bitmap Object 120
  Copy from Clipboard 121
  Edit a Bitmap 121
  Label 121

Symbol Factory
Sizing Bitmap.?*See* Sizing a Bitmap in Symbol Factory

E

Edit 176
Edit Alarm Details Dialog Box 211
edit an existing tag 200
edit-compile-download 32
editing 35
Edit Menu 175
Edit Message Details Dialog Box 216
Edit Passwords 23
Edit Program OFF-LINE (Write to Panel Later) 33,?117
Edit Program ON-LINE 36
Edit Tag Details 47
electrical circuits ix
Embedded Command 116
embedded data
Tag 116
Embedded Data Value 119
embedded printer command 117
Embedding Data Value 118
Enable Beeper 221
ENTER PROJECT INFORMATION ix
Entivity (Think & DO) Modbus - Rev B C-34
Environmental Specifications 34
Error Code Descriptions
GENERIC DEVICENET I/O A-39,?192
Error Codes 217
Error Code Value 225,?A-9
ERROR CODE VALUE A-7,?202,?208
Error Messages A-15
EZTouch Programming Software A-62
PLC Drivers A-15
Ethernet 3
Ethernet/COM Port 41
EU Information 211
European Union (EU) Directives 204
Excel 204
Excel Database Fields 206
Excel file 204
Exec 231
Exec Flash 40
Exec Software 174
EXISTING PROGRAM 44
Exit 184
Explorer view 208
Explorer View 208
Export Alarms 212
Comma delimited... 212
To Excel... 212
Export Messages 217
Export Scale Factor 12
Export Tags 204
external tags 3
EZ Ethernet
Error Codes
EZPackager utility A-61
EZTouch Panel
Error Messages A-61
Programming Software A-62

F

F1 function key 4
Faceplate 99
FAQs A-2
File Menu 170,?37
File Name 142
Firmware 190,?231
Revision 36
Firmware Revision number 9
firmware upgrade 4
Flash 191
Flash card 190
Flash to RAM 191
Floating Point 44
Floating Point Tag 29
Fly-Over HELP 93
Fractional Digits 64
frame 45
Frame 187
Frequently Asked Questions A-2

G

GE 90-30/90-70 SNPX C-20,?C-21
GE Fanuc Software VersaPro configuration software C-21
General Electric (GE) PLC Communications Setup C-20
Generic EtherNet/IP Communications Setup C-17
GENERIC PROFIBUS-DP Error Code Descriptions A-54
GE VERSAMAX PLC Communications Setup C-21
Good Communication Toggle 224
Go To Screen 102
Graphical trending 40
graphic file
size 186
Grid Size 181

H

handle 47,?48
Handshake Tag 65
Hardware 189
Help
  button 4
  Menu 233
  Topics
  windows 4
HELP 118
Hexadecimal 97
Highlight Internal Tags
  Tag Database 198
Highlight Unused Tags
  Tag Database 198
Horizontal Center 175
Host Link unit C-24

I

IBM 3
IBM or compatible PC 3
icon 13
Image database 130
Image Number 128
Images tab 128,?3
Import Bitmap 121,?127
Import Tags 205,?208
Increase Clock by 1 hour 227
increment
  value 133
Increment/Decrement Hour 106
  Choose the function 107
  Label 106
  Text 107
increment/decrement operation
  program 134
Increment/Decrement Value Object 133
Increment/Decrement Value Object 133
  Enter Text 133,?141,?135
  increment/decrement operation
    program 134
  Label 133
Increment/Decrement Value tab 134
Indicator Button Object 52
  Actuator Types 51
  Label 51
  On/Off Text 71
  Style 26
  Tag Name 71
Indicator Light 71
Indicator Light object 72
Indicator Light Object 71
  Label 71
  On/Off Text 44
  Style 12
  Tag Name 12
industrial automation 235
Information (Panel) 189
inputs 44
Installation 5
Installing the Software 44
internal Real-Time clock 106
internal tags 145

J

K

keypad 28,?62,?69
  display large 221
Keypad 84
  Data Type 63
  Fractional Digits 64
  Justification 64
K-Sequence, DirectNet and Koyo Modbus C-16,?C-14,?C-17,?C-26

L

label
  numeric entry keypad 62
Label 9,?133,?141,?135
ladder logic 44,?99
Language 111,?227
languages 47
Languages 49,?221
LED A-5
legend 97
Line 185
Line Graph 95
Line Graph Object 95
  Axis/Tick Color 95
  Background Color 95
  Display Legend 97
  formatting 97
  Label 95
  Language 97
  Pen tab 97
  Pen Tab
    Legend 97
    Tag Name 97
  Sample per Chart 96
  Sample Rate 96
  XY Axis tab 97
lines
  horizontal and vertical restraint 185
Logic Master configuration software C-20,?C-23

log the PLC error code A-7
Lookup Text Object 215
  Enter Message and Attributes 114
  Justification 115

M

magnifications
  screen 184
Main Menu Bar 161,?126
Main Programming Screen 121,?93
Maintain aspect ratio 186
Maintain Aspect Ratio 88
Major Divisions 99,?80
Manual Mode 38
map file 44
mapped 44
mapping 56
mechanical switches 55
Melsec FX C-22
Memory 79
Memory (bytes) 190
Memory Card A-6
Menu commands 170
Message
  print out from PLC 216
  sending to printer 79
Message Database 114,?88
Message Number 80
messages 112
Messages 9
  Print D-3
Message Text 87
Meter 87
Meter Object 89
  Alarms Tab 90
  Digital Display Tab 88
  Format 90
    numbers 90
  Fractional Digits 90
  Justification 87
  Label 87
  Style 88
  Tag Name 33
Meters 93
Micrologix 1500 C-5
MicroLogix DF1 Full Duplex C-3,?C-4
MicroLogix DF1 Half Duplex C-4,?A-73
MicroLogix DH485/AIC C-5
Midpoint value 99
Miscellaneous Errors (Mxx_x) A-73
Mitsubishi PLC Communications Setup C-22
Modbus RTU C-23
mode 3
Mode Bit 46
Model Part Numbers 46
Modicon PLC Communications Setup C-23
Momentary Off 47
Momentary On 81
Momentary ON or Momentary OFF
  setting powerup state 95
monitor a bit 82
monitor and display a tag 128
monitor specific Tags 122
Monitor Tags 193
mouse 130
mouse cursor 129
Multi-Language Support Feature 228
Multi-state Bitmap 130
Multi-state Bitmap Object 132
  Edit a Bitmap 130
  Images
    Add Image 129
    how they will be displayed 112
    Programming 118
    Remove Image 112
    tab 119
  Label 115
  Tag Name 114
Multi-state Indicator 113
  print messages from D-3
  used as an indicator light 113

N

Navigation Tool Bar 39
ndicator light 51
needle 87
New Screen 180
non-printable ASCII character 118
Non-Printable ASCII Character 118
Non-programmed bitmap action on panel 129
Non-programmed message action on panel. 113
Nonvolatile flash card 9
Notepad 204,?212
Notification Tag 65
Number of Steps 58
numeric 9
Numeric Display 24
Numeric Display Object 73
  Data Type 74
  Digits 74
  Display Values 75
  Format 74
  Fractional Digits 74
  Justification 74
  Label 73

PLC Values 75
Scaling Tab 75
Tag Name 73
Numeric Entry 22
Numeric Entry Object 62
Enter Range and Test Display 63
Label 62
PLC Values 64
Scaling Tab 64
Select the Format of the Keypad 63

O

Object Description 50
Object Errors (Jxx_x) A-67
object icon 45
Object Name 50
objects
print D-3
Objects 44
Objects Menu 177
Objects Overlapping 163
Object Tool Bar 45
OBJECT TOOLBAR 163
Object Tool Bars 129
Octal 126
Off Bitmap 4
OK/Cancel/Help Buttons C-24
OMRON C200 and C500 PLC Communications Setup C-24
OMRON Host Link PLC 126
On Bitmap 32
ON-LINE 47
On/Off Text 12
Onscreen HELP 38
onscreen prompts 170
Open Project 180
Open Screen 134
Operation 190
Option Board 190
Type 44
Option Card installed 99
outputs 177
Output Variable 177

P

Package Project for EZTransfer 174
palette 9
Panel Error Messages A-61,?B-2,?B-5
Panel Information 27
Panel Menu 189
Panel Name 190
panel tags 44
Panel Time and Date 191
Panel Tool Bar 165,?49
Panel to PLC 224
Panel to PLC Link 29
Panel Type 20,?19
GROUP 49
Password 28
PASSWORD 49
Password PLC 49
Password Protect Object 48
Passwords 48,?222
Password/Tag 49
Paste 175
PC 3
PC Com Port (Connects to Panel) 34
PC requirements 3
Pen 97
Pick Attributes 178
PID Faceplate Object 99
Alarm Bit 101
Label 99
Legend tab 101
Mode Bit 101
Output 100
Bar color 101
Bar ranges 100
Tag Name 100
Process Variable/Setpoint
Tag Name 100
PID Faceplates 40
PID loop tune face plates 47
Place Button 44
PLC 3
addresses 9,?65
Attributes 74
data type 38
Driver 190
Driver Code Revision 190
Driver memory 190
Error 225
HELP 62
location 4
Manufacturer 190
memory locations 62
Model 190
register 81
registers 9
Type 36
Type and Protocol 34,?48
PLC5 DF1 C-9
PLC-5 Programming Software Series A 6200 C-10
PLC Attributes 44
PLC-based control 20

PLC Communications Serial Port Setup C-20,?C-23-,?C-21,?C-32
PLC Communications Setup C-3
Allen-Bradley C-3
Data Highway Plus C-10
MicroLogix DF1 Full Duplex C-3,?C-35,?C-36-,?C-37,?C-39,?C-38,?C-41,?C-40,?C-43-,?C-42
MicroLogix DF1 Half Duplex C-4
MicroLogix DH485/AIC C-5
PLC5 DF1 C-9
Remote I/O C-12
SLC 5/03, 5/04, and 5/05 DF1 Full Duplex C-6
SLC 5/03, 5/04, and 5/05 DF1 Half Duplex C-7
SLC 500, 5/01, 5/02 and 5/03 DH485/AIC C-8
DirectLogic C-16
K-Sequence, DirectNet and Koyo Modbus C-16
General Electric (GE) C-20
GE 90-30/90-70 SNPX C-20
GE Versamax PLC C-21
Generic DeviceNet I/O C-14
Generic Ethernet /IP Network C-17
Generic Profibus-DP C-26
Mitsubishi C-22
Melsec FX C-22
MODBUS C-23
Modbus RTU C-23
OMRON C200 and C500 C-24
OMRON Host Link C-24
Seimens S7 MPI Adaptor C-30
WinPLC Communications Setup C-32
PLC Communication TIMEOUT A-11
PLC Com Port settings 20
PLC Conversion Errors (Pxx_x) A-63
PLC Driver Error Messages A-15
PLC Error A-8
PLC ERROR A-9
PLC error code value A-7
PLC ERROR CODE VALUEs A-13
PLC Error (Discrete) A-8
PLC Error Messages
log and display A-7
PLCs Supported 218
PLC to Panel 225
PLC Type and Protocol 95
plots 3
P/N EZ-TOUCHEDIT 3
P/N EZ-TOUCH-M 64
P/N EZTOUCH-PGMCBL 75
Point 1 ix
Point 2 28
popup keypad 69
Popup Keypad 45
popup thumbwheel 212
Power Supply A-5
Power-Up Screen 220
Precision for Floating 93
Precision for Floating Point entry 79
predefined programming objects 66
preprogrammed messages 100
Present Value 40
preset values 9
Preventative Maintenance 174
Print 174
Print Alarm Database 3
Printer 213
Project Attributes 221
sending ASCII commands to 174
Setting COM1 for D-2
Printing from PLC 174
Print Message Database 174
Print Screens 174
Print Setup 174
Print Tag Database 99
Process Variable (PV) 100
Process Variable/Set Point 130
Program Images 23
programmable graphic operator interface 167
Programming Screen 168
Progress Bar 23
Project Attribute configuration 36
project attributes 33
Project Attributes
Alarm Display Time (sec.) 220
Alarm List Size 220
Alarm Protection 229
Clock 223
Clock Source 224
Date Tags 223
Time Tags 224
Default Language 220
Display Saver 220
Enable Beeper 221
General 220
Language 227
Panel to PLC 224
Current Language Number 225
Current Screen 224
Good Communication Toggle 224
Low Battery 224
PLC Error 225
PLC Error Code Value 225
Popup Keypad 225
Screen Buffer Overflow 224
Passwords 222

GROUP 222
PASSWORD 223
TAG 223
PLC to Panel 225
Beeper On/Off 227
Clear Alarm Count 227
Clear Alarm History 227
Decrease Clock by 1 hour 227
Increase Clock by 1 hour 227
Select Current Language 227
Switch to Screen Number 226
Trigger Screen Saver 227
Power-Up Screen 220
Printer 221
Baud Rate 221
Control RTS 222
Data Bits 221
Parity 221
Require CTS 222
Select RS485 221
Stop Bits 221
Project Description 230
Project Information 33
Project Information Dialog box Errors (Ixx_x) A-66
Project Location 166
Project Name 48
Project Screens Explorer View 227
Project Screens Explorer View window 234
Project Setup 32
Proportional Integral Derivative (PID) 48
Protect 34

Q

quotation marks 204,?212

R

Radio Button Object
Label 53
On/Off Text 54
Style 53
Tag Name 53
Radio Buttons 9
RAM 35
RAM Memory 190
RAM to Flash 191
Range 63
Read from Tag 134
Readings 97
Read Program from Panel and Edit OFF-LINE 9
read/write 44
Reboot 190
Recipe 66
Recipe Object 66
Label 66
Recipe Tab 67
Register Values 67
Text 66
Rectangle 185
redo 3,?175
Reference 170
register value
increment or decrement 134
Remote I/O C-12
Remove Image 132
Rename Screen 180
Requirements 37
resize a symbol 188
RESIZING AN OBJECT 40
REVIEW 3
Revisions 189
Right click 3
Right click menu
Project Screens Explorer View 234
RS-232C Programming Cable 214
RSLogix configuration software C-3

S

Safety Extra Low Voltage (SELV) ix
Sample Rate 96
Triggered
State 96
Save Project 64,?170
Save Project As Protected 171
Save Screen 76,?170
Saving Errors (Sxx_x) A-67
Scaling 40,?33
Screen Background Color 183
Screen Buffer Overflow 224
screen contrast 109
screen description 39
screen design features 36
Screen List 9
Screen Menu 180
Screen number 9
screens 40
Screens 232
changing from a PLC 226
Explorer View 33
navigate
Explorer View 184
switch between or open 184
Screen Saver 108

Search
security 222
Seimens S7 C-30
Seimens Step 7 Programming Software C-30
SELECT ACTION ix,?47
Select All 175
Select Current Language 227
Select Language Object 111
  Label 111
  select the language 111
  Text 111
Select Node 3
Selector Switch 12,?55
Select PLC 230
SELV Circuits 46
separated by commas 204
serial port 46
Set Limit 89
Set Off 63
Set On 9
Set Panel Time 191
Set Point 100
set points 44
Set Point (SP) 99
Setup.exe 44
Setup Menu 198
Show 320x240 Rectangle 184
ShowGrid 122
Show Ticks 88
Show Touch Cells 183
Siemens' 3964R Protocol C-30
Siemens S7 MPI Adaptor C-30
Signed 48
Signed/Unsigned 3
Simulate Next State 179
Simulate Press 22
Simulate Previous State 179
size a Bitmap
  Static Bitmap 186
Sizing a Bitmap in Symbol Factory 188
sizing bitmaps
  Dynamic Bitmap 44
  Static Bitmap 188
SLC 5/03, 5/04, and 5/05 DF1 Full Duplex C-6
SLC 5/03, 5/04, and 5/05 DF1 Half Duplex C-7
SLC 500, 5/01, 5/02 and 5/03 DH485/AIC C-8
Slide Switch 76
Snap to Grid 182
Software 116
Sort by Address
  Tag Database 201
Sort by Data Type
  Tag Database 201
Sort by Tag Name
  Tag Database 201
sort the Tag Database 200
Special characters 19
Standard Tool Bar 19
Start Editing Screen 21
state 27
Static Bitmap 186
Static Text Object 165
  General tab 58
  Language 58
Station Number 58
Status Bar 58
Step 1 59
Step 1 Project Information 59
Step 2 Design Your Screens 58
Step 3 Write Your Program to Panel 82
Step Switch 56
Step Switch Object 57
  Label 57
  Number of Steps 126
  Simulate Press 56
  Step #1 Tab 93
  Style 133
Stretch to Fit 57
String Tag 56
Sub Divisions 56
Subtract 120
switch between screens 184
switches C-24
Switch Object 106
  Actuator Types 164
  Background Color 56
  Label 218
  On/Off Text 187
  Style 188
  Tag Name 188
Switch Screens from a PLC 226
Switch to Screen Number 226

T

tag 9
Tag 44,?49
Tag Database 47,?198,?201
  Data Type 199
  Number of Characters 199
  PLC Address 199
  Sort list 200
  Tag Name 199
  Tag No. 198
Tag Data Type

set default 176
Tag Name ix
Tag Related Errors (Txx_x) A-63
tags
internal tag database 198
Tags
Internal, tag database 83
tation Number 199
Technical Support 76
test A-11
Test Flash 192
testing 190
Test RAM 192
Text 83
Text Entry 84
Text Entry Object
Label 77
String Characteristics 164
String Tag Name 38
Text Object 99
Text Objects Tool Bar 9
text strings 69
theoretical perfect value 132
Think N Do Live C-32
Think-n-Do Map File, 9
Think N Do Map File
Import C-33
Think N Do Software
data types import C-32
Think N Do Studio C-32
Throw Switch 70
thumbnail view 69
Thumbwheel 46
Thumbwheel Object 86
Format 161
Label 9
Number of Wheels 225
Tag Name 48
Tile 232
Time and Date 36
Time/Date 211
Title Bar 167
To Excel... 204
toggle
between horizontal/vertical lines 165
Toggle 176
Toggle Switch 163
Toolbar 163
tool bars
moving 168
Tool Bars
3 Easy Steps 165
Draw 166
Objects 162
Basic 76
Bitmap 126
System 77
Text 78
Panel 77
Project Screens Explorer View A-6
Standard 183
top slot 77
Touch cells 78
touch objects 173
transfer 77
Transfer to Panel... 82
transmission format C-24
transmission speed C-24
Transparent 60
transparent object 60
Triggered Text Object 60
Format 60
Label 60
Language 61
Tag Name 219
Text - On and Off 17
Trigger Screen Saver 227
Trigger Tag 19
Tri-State Switch A-5

U

UL File #E209355 ix
unauthorized users 48
undo 9
Undo 175
Unicode Indicator Button 148
Unicode Indicator Light 147
Unicode Multi-state Indicator 149
Unicode Text 143
Unsigned 44
Update PLC Driver 191
Upgrade Firmware 230,?233
user-defined 44
user-defined frame types 45
User Memory 190
User Memory Flash 190
User Program 190
user program backup 9

V

Value 97,?134
Value Range Errors (Vxx_x) A-62
Vector-based graphics 40
vertical axis (Y) 97

Vertical Center 175
VGA display 3
view
  custom screen magnifications 184
View/Edit Attributes 230
View/Edit PLC Com Setup 141
View File Object 50
Visibility 50
Visibility/Details 50
Visibility/Details Tab 50
Visibility Tag 89

W

Watchdog 224
What you need to get started 3
Windows 98/NT4.0/2000/ME 3
Windows-based architecture 32
Windows Enhanced Metafile 120
Windows Enhanced Metafile (.EMF) 186
Windows Menu 232
Windows Metafile 120
Windows Metafile (.WMF) 186
WinPLC C-32
WinPLC Communications Setup C-32
wiring diagrams
  PLC 27
word 44
Write Program to Panel 46
WRITE to a Tag 134

X

X-Axis 97
XY Axis
  Label 98
  Major Divisions 97
  Minor Divisions 97
  Show Tick Numbers 98
  Show Ticks 97
  Show Vertical Grid 98
  X-Axis Grid 98

Y

Y-Axis 98
  Range 98

Z

Zoom 122,?184

A

Troubleshooting

In this Appendix....

— Frequently Asked Questions (FAQs)
— Troubleshooting
— PLC Driver Error Messages
    Allen-Bradley PLCs
    Aromat PLCs
    Control Techniques PLCs
    CTC PLCs
    DirectLogic PLCs
    General Electric PLCs
    Idec PLCs
    Mitsubishi PLCs
    Modicon PLCs
    OMRON PLCs
    Siemens S7 PLCs
    Square D PLCs
    Texas Instruments PLCs
    Generic DeviceNet I/O
    Generic Ethernet/IP
    Generic Profibus-DP
    Modicon Modbus Plus
    Uni Telway PLCs
— EZ Series Touch Panel Error Messages
— EZ Series Touch Panel Editor Programming Software Error Messages

Frequently Asked Questions (FAQs)

1. How do I format an address string when connecting to multiple PLCs?

Simply add the PLC Station Number to the beginning of the address string. (For example, if the PLC Station number is 3 and the address is V2003, enter **3-**V2003 for the address string.)

2. Can I change the Data Type of a Tag Name's assigned Address String (PLC Address)?

Yes, but only if the Tag is used on no more than one object. If it is currently used by more than one object, you must:

a. assign the other objects to a new or different tag(s)—or delete those objects
b. change the data type of the PLC Address under Setup > Tag Database
c. reassign the other objects to the original tag as necessary

3. Can the Tag Database be exported to DirectSOFT32 or other applications?

The Tag Database, Alarm Database, and the Message Database can be exported to an Excel file or a CSV file (comma delimited). An Excel or CSV file can also be imported into the Tag Database.

4. How do I convert a project from one panel size to another?

Converting a project created on a 6" panel to an 8" or 10" panel requires nothing more than opening the project with the new size selected. Converting from 8" or 10" to 6" size is best done by the following procedure:

a. Select Screen > Show 320x240 Rectangle.
b. Move all the objects onto the new small 6" grid shown.
c. Save the project.
d. Open the project again, selecting the new panel size on the Project Information box.

5. Can I use the Power Up Screen selection (under the Project Attributes > General menu) and also use the Switch to Screen Number (under Project Attributes > PLC to Panel)?

Not exactly, because before the panel can actually display the Power Up Screen, it reads from the PLC and displays the Switch to Screen Number.

6. Can I place objects anywhere on the screen?

Yes, with EZ Series Touch Panel Editor Programming Software you can place Objects anywhere on the screen, but with EZ Series Touch Panel Editor Software Touch Objects like Push Buttons, Switches, Numeric Entry, etc., will always snap to touch cells.

7. What is a touchcell?

A touchcell is the physical area on the panel that defines user selection by touching. A Touch Object can contain more than one touchcell, but cannot contain less than one touchcell. On most* panels, the size of a touchcell is 40 x 40 pixels. However, since the screen size differs, the physical size of 40 pixels does as well. On the 6-inch panels, 40 pixels = 0.57". On the 8-inch panel 40 pixels = 0.52". On the 10-inch panel 40 pixels = 0.41". On the 15-inch panel, 40 pixels = .738". *On panel Model P/N's EZ-S6M-R or EZ-S6M-RS, the size of a touchcell is 20 x 20 pixels.

8. *Can I use the floating point data type with all objects?*

No, only Numeric Entry, Numeric Display, Meter, Bar Graph, PID Faceplate, Line Graph and Recipe objects support floating point tags. All other objects do not support floating point tags.

9. *Why do I not see all the discrete tags in a pushbutton object on the Tag Name pulldown?*

You may have defined tags as discrete but if the PLC addresses assigned to these tags are read only addresses, then you will not see these tags. The reason is because a pushbutton writes discrete data to the PLC address and if a tag is mapped to a Read Only PLC address, the pushbutton is not allowed to write the data.

10. *Can I use a label on a vertical Radio button?*

No, a label is not available for either vertical style Radio button or vertical style Tri-State Switch.

11. *How does a Radio button work?*

A Radio button is assigned to a word (16 bit register) in the PLC. Each bit in the word (of this associated tag) corresponds to an individual button of the Radio button object. Only one button can be ON at a time. So, turning one button ON automatically turns all other buttons OFF.

12. *What is the initial state of objects when the project is written to the panel?*

If the object reads from the PLC, it will show the current PLC value. If it writes to the PLC, it will default to zero (for OFF).

13. *What will be the state of objects if they are mapped to internal tags?*

Internal tags are initialized to OFF.

14. *When I select a group of objects and try to move, will all the objects do not move?*

Yes, if you select a group of Objects you can move this group anywhere on the screen. Whereas, with EZ Series Touch Panel Software, touch objects are always snapped to a touch cell, therefore you would be able to move only display objects.

15. *When I have objects at the boundary of the screen, I am not able to move the objects freely (vertically up/down or Horizontally left/right near the boundary). What can I do to correct this?*

You can use the PC's keyboard arrow keys to move objects up or down along the boundary line.

16. *What is the maximum number of screens that a project can have?*

The maximum possible is 999. However, the panel's memory may limit the achievable maximum to a lower number of screens, depending on the complexity of bitmaps and objects.

17. What is the maximum number of alarms that a project can have?

The maximum is 999, but there is no limit to how many times each alarm can be used in the panel.

18. What is the maximum number of messages that a project can have?

You can define a maximum of 999 messages in a project.

19. Can I insert a 640 x 480 bitmap on a screen?

The maximum size of a bitmap that can ever be placed on a screen is 640 x 480 on a 8" or 10" panel. But, the compressed size of bitmap is also a limitation. EZ Series Touch Panel uses an RLE (RunLength Encoding) algorithm to compress bitmaps for storage. If this compressed bitmap size exceeds 64K bytes, you cannot place the bitmap on the screen.

20. Is it possible to find out whether the compressed bitmap size is less than 64K before trying to insert the bitmap?

No, the only sure way to know is to try. An error message will alert you immediately if the 64K size is exceeded. Using fewer colors (like 256 vs. 24 bit) will help prevent this problem.

21. Is there a limit to the number of objects that can be placed on a single screen?

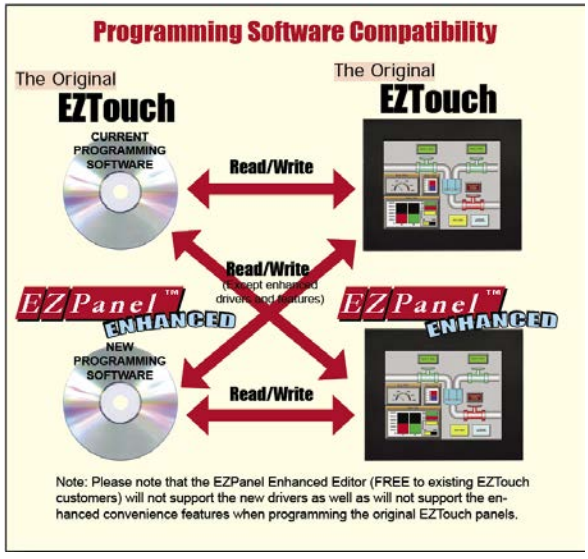
Yes, the amount of objects that can be placed on a single screen is limited by the screen buffer size. The maximum number of objects is dependant upon object types.

22. Can I use shortcut method when addressing (B3:0/0)?

Yes, you can use the shortcut method when addressing, such as B3/0, B3/1, B3/2.

22. Is Enhanced EZ Series Touch Panel Software compatible with EZ Series Touch Panel?

Yes, EZ Series Editor Software is compatible with current EZ Series Touch Panels (from ADC) as well as the new EZ Series Touch Panel models. However, EZ Series Touch Panel Editor Programming Software does not allow current EZ Series Touch Panels (from ADC) to utilize software upgrades, Enhanced drivers (Universal Ethernet, Aromat Mewtocol COM, Control Techniques, Control Technology Corp. (CTC), EZ Series PLC, Idec Computer Link, Mitsubishi CC Link, Siemens S7-200, Square D Symax, and Texas Instruments), or Enhanced Features (Overlapping of Objects, Free Sizing of Touch Objects, Display of Tag Address on Objects, and Pick and Apply Style).



Troubleshooting

Problem: Panel won't power up.

Action:

1. Connect power to the panel (24 VDC, 1.5A or larger).
2. Apply power while observing the LED in the back of the panel.
   a. LED does not light means: NO POWER to unit or power supply failed. Check power supply or replace.
   b. LED turns RED and stays RED means: Unit failure, return for service.
   c. LED flashes RED and turns GREEN means: normal operation.
      (1) the display does not light after 10 seconds, see Display Blank, below.
      (2) the display lights, normal operation.

Refer to the EZ Series Touch Panel Editor Programming Software Help topic, or the EZ Series Touch Panel Hardware Manual chapter on "Connections and Wiring" for more information.

Problem: Cannot communicate with Panel from Programming Computer.

Action:

1. Check cable, ensure that it is the correct cable and that it is properly connected at both ends.
2. Check panel for power.
3. Check to ensure the correct PC COM port is selected in the EZ Series Touch Panel Editor Programming Software and that it is available in the PC.
4. Check the COM1 setting in Setup Mode on the panel.

Refer to the EZ Series Touch Panel Editor Programming Software Help topic, or the EZ Series Touch Panel Hardware Manual chapter on "Connections and Wiring" for more information.

Problem: Panel does not communicate with PLC.

Action:

1. Check communications cable:
   a. Is it the right cable?
   b. Is it connected?
   c. Is the cable terminated properly?
2. Check PLC settings:
   a. Is PLC system powered?
   b. Is PLC COM Port properly configured?
   c. If there is a RUN switch on PLC, is it in the term/remote mode?

Refer to the EZ Series Touch Panel Editor Programming Software Help topic, or the EZ Series Touch Panel Hardware Manual chapter on "Connections and Wiring" for more information.

Problem: Memory unavailable.

Action:

1. Make sure that the Flash Card is in top slot, and the RAM Card is in the bottom slot.

Refer to the EZ Series Touch Panel Editor Programming Software Help topic, or the EZ Series Touch Panel Hardware Manual chapter on "Connections and Wiring" for more information.

Problem: Display is Blank.

Action:

1. Display indicates NO USER PROGRAM after power up. There is no user program installed into the panel.
2. Display is blank. Push extreme upper left and extreme lower left touch cells on front of panel (top and bottom of column 1 on panel.) At this point, one of the following will occur:
   a. There is no change, and the display remains blank. This indicates UNIT FAILURE: return for service.
   b. Unit SETUP screen appears, screen is hard to read. Adjust screen contrast control for 6- or 8-inch units (10-inch units have no contrast adjustment).
   c. Unit SETUP screen appears normal. Unit has no user program — transfer user program to panel.

Refer to the EZ Series Touch Panel Editor Programming Software Help topic, or the EZ Series Touch Panel Hardware Manual chapter on "Connections and Wiring" for more information.

Problem: Display hangs when unit is powered up, "Initializing..." message remains on screen (unit has invalid RAM memory)

Action:

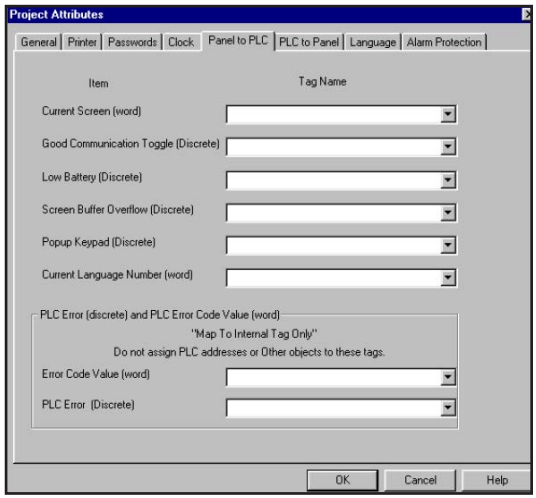
1. Remove power. While pressing extreme upper and lower left touch cells on the panel, reapply power.
2. You will now be in setup mode.
3. Run EZ Series Touch Panel Editor Programming Software. Select Panel > Clear Memory from main menu bar, or transfer a new user program to the panel.
4. Press exit to enter run mode. Screen will be blank.

Problem: "How do I log and display PLC Error Messages?"

Action: Following is a description of how to set up the panel to monitor communications between the PLC and panel. This will allow the panel to detect a PLC error and log the PLC ERROR CODE VALUE in the Alarm Database. Open your EZ Series Touch Panel Project in the EZ Series Touch Panel Editor Programming Software. For the purposes of this demo, we are using DirectLogic K-Sequence Protocol.

1. From the Main Menu Bar, click on **Setup > Project Attributes** and then click on the **Panel to PLC** tab.

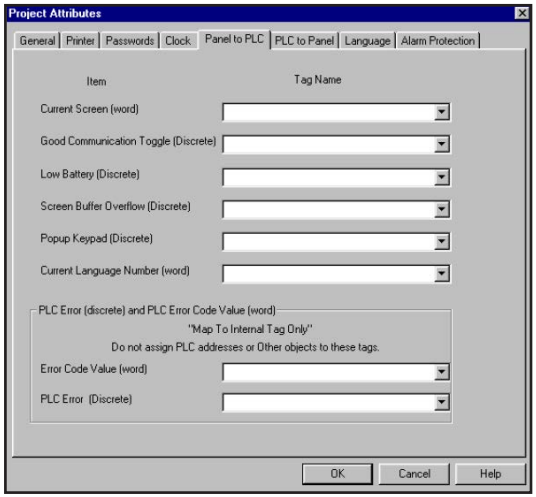
2. Click in the field next to Error Code Value (word). Type in **ERROR CODE VALUE** for the tag name as shown below.



3. Press **Enter**. The following **ADD NEW TAG DETAILS** dialog box will appear.

4. LEAVE THE **Address String** FIELD EMPTY and select **UNSIGNED_INT_16** as the Data Type. Click **OK**.

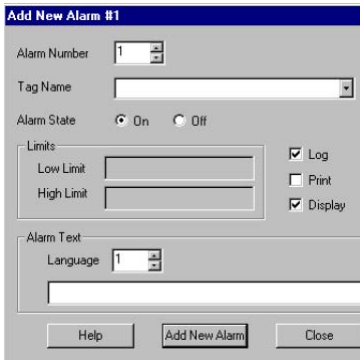
5. Click in the field next to **PLC Error (Discrete)** and type in **PLC ERROR** as shown below.



6. Press **Enter**. The following **ADD NEW TAG DETAILS** dialog box will appear.

7. LEAVE THE **Address String** FIELD EMPTY and select **DISCRETE** as the Data Type. Click **OK**.

8. From the Main Menu Bar, click on **Setup > Alarm Database**. On the Alarm Database dialog box, click on the **Add/Edit** button. The following dialog box will appear.



9. Enter the following parameters in the **Add New Alarm** dialog box.

   a. For **Alarm Number 1**, click on the arrow next to **Tag Name** and select **ERROR CODE VALUE** from the list.

   b. Leave **0** as the **Low Limit** and change the **High Limit** to **1**.

   c. Leave **Log** and **Display** checked.

   d. Under **Alarm Text**, type in the alarm message as **Error Code Value**.

   e. Click on **Add New Alarm** button.

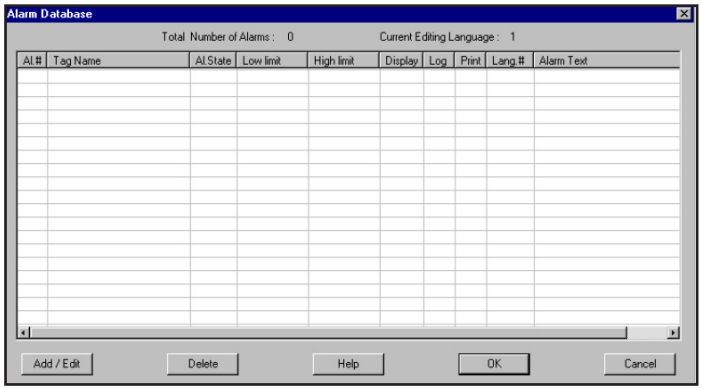
   f. For **Alarm Number 2**, click on the arrow next to **Tag Name** and select **PLC ERROR** from the list.

   g. Leave **Log** and **Display** checked.

   h. Under **Alarm Text**, type in the alarm message as **PLC ERROR**.

   i. Click on **Close**. The Alarm Database should look like the screen capture, below.

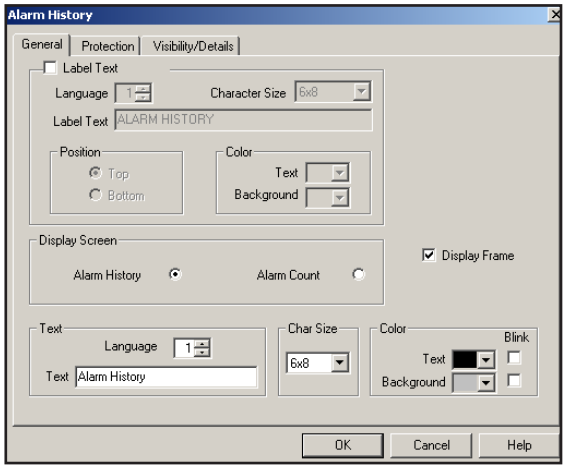
10. Click on **OK**.



To be able to view the Alarm History and the PLC ERROR CODE VALUE, perform the steps on the following page.

1. First we'll program a screen with an Alarm History button that will allow you to view alarm history. Open the screen in your EZ Series Touch Panel Editor Programming Software where you want to place the Alarm History Button.

2. Click on **Objects > Alarm History**. The following screen will appear.



3. Type in **View** in the **Text** field. Click on **OK**.

4. A cross-hair cursor will appear on the programming screen. Position the cross-hair where you want the object to appear (center at the bottom of the screen), and click once.

5. Grab the object by a handle and drag to resize it until the label displays in its entirety, as shown below.

6. Click on **File > Save Project**.

7. Transfer the saved Project to the panel.

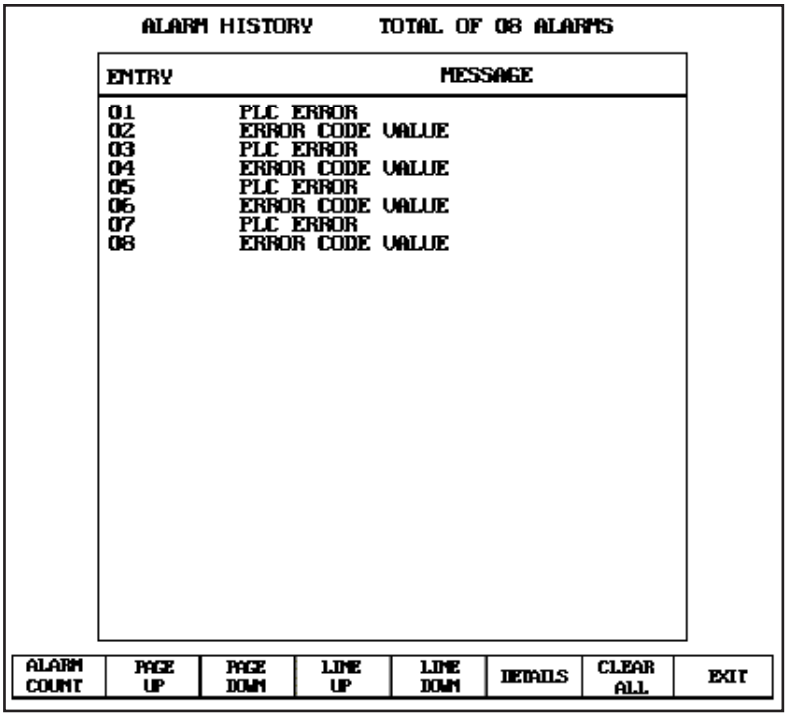
8. To test the Alarms, perform the following steps.

   a. Disconnect the PLC and then reconnect it as soon as you can after the first error message flashes on the panel screen.

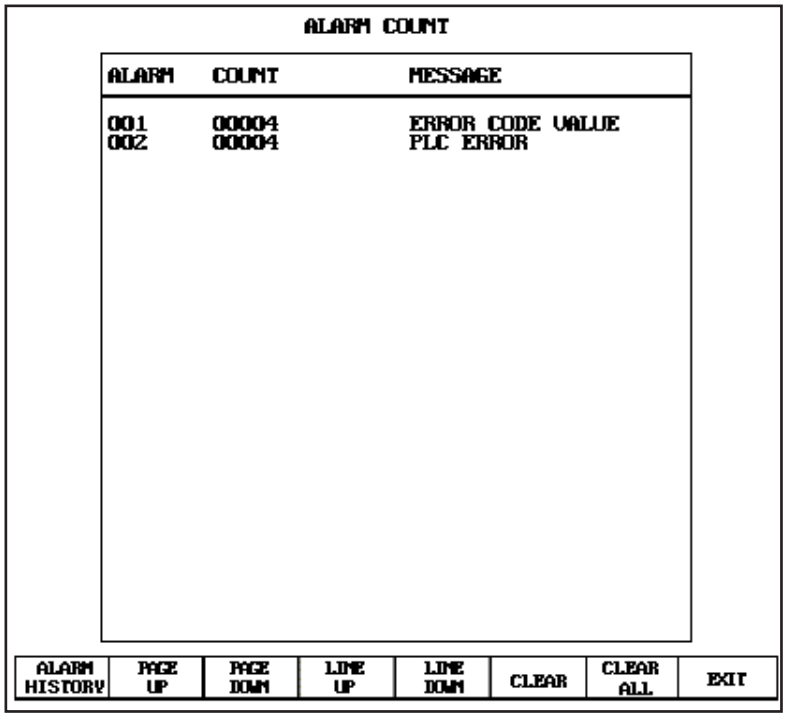
      (While disconnected the "**PLC COMMUNICATION TIMEOUT**" error message will flash across the top of the panel screen, and the "**01/02 ERROR CODE VALUE**" error message will flash across the bottom of the screen.)

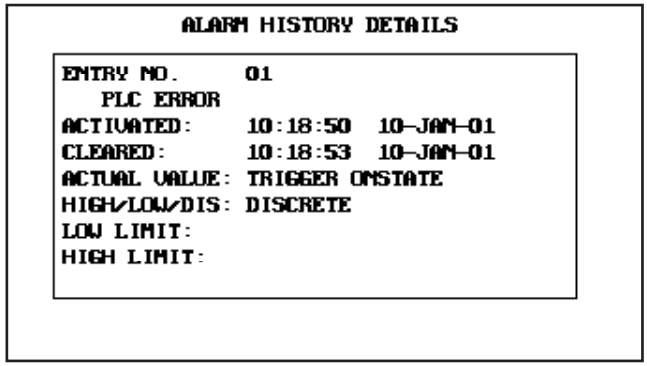
   b. Press the **ALARM HISTORY** button on the panel screen. The Alarm History screen will appear. It will look similar to the one shown below. (Each time the error message flashes on the panel screen it is counted as an entry.)

   c. Press the **ALARM COUNT** button. The following screen will appear, showing you the number of times the messages was sent.

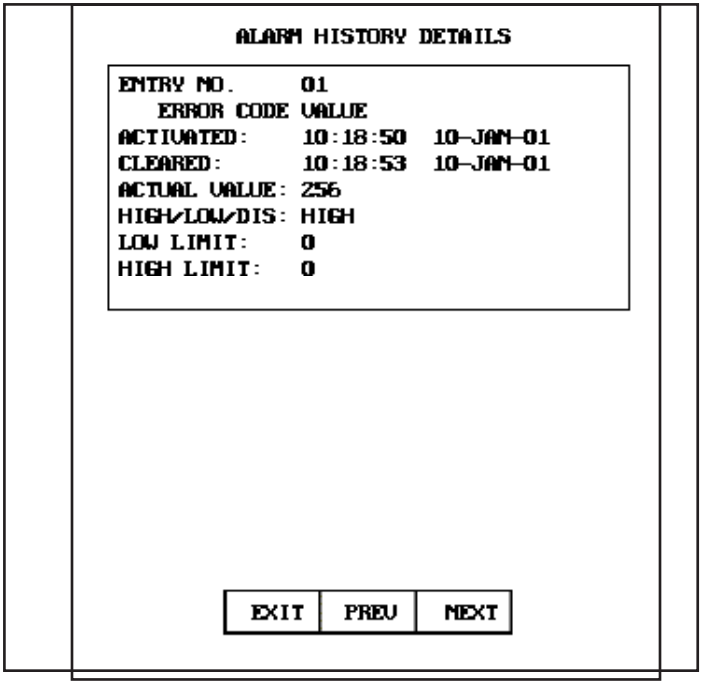


d. Press the ALARM HISTORY button. From this screen press the **DETAILS** button. The following screen will appear, showing the details of the alarm.





e. Press on the **NEXT** button to view details of the second alarm. Remember or write down the **ACTUAL VALUE**. (In this case, the actual decimal value is **256**.)



f. Press the **EXIT** button to return to **ALARM HISTORY** screen, and then press the **EXIT** button on this screen to return to the project screen.

g. Convert the **Actual Value** of the error that you wrote down from the **Alarm History Details** screen. All PLC ERROR CODE VALUEs are in decimal. Convert them to HEX. From the Actual Value of 256, you will get a Hex value of 100. Look for this value under Driver Errors (0x0100).

See the following section for PLC Driver Error Messages —

Problem: What is Screen Buffer Overflow?

This message indicates that there are more objects on the screen than the panel can display. When a screen is displayed, the panel copies the objects to a buffer. If the buffer is filled then this message is displayed and any remaining objects are ignored. The amount of memory used by an object is dependent on the type of object, visibility, the label, and strings used by the object. Some objects should be removed from the screen.

Problem: What is Write Queue Overflow?

This message indicates that the panel was unable to write all of the tags to the PLC. The panel can queue up to 40 tags to write to the PLC. After the tag is written to the PLC it is removed from the queue. If a write is attempted while the queue is full then this error message is displayed and the write is ignored.

PLC Driver Error Messages

ALLEN-BRADLEY PLCs

Driver Errors for Micrologix/SLC 500 DH-485/AIC

0x0000 No error

0x0001 Incompatible Revision

This error will be displayed when the driver and exec have incompatible revision.

0x0002 Limit of elements per screen exceeded

This occurs when there are too many registers on the display to monitor.

0x0004 Incorrect Map Size

This occurs when an incompatible map is loaded into the unit. The driver will not attempt to communicate with the PLC when this error occurs.

0x0008 Invalid Checksum Received

This error occurs when a message with an invalid checksum is received by the unit.

0x0010 Communications Errors

This error occurs if there are problems receiving messages.

0x0020 Communications time-out PLC xx

This error occurs when the panel does not receive a reply form PLC xx to its command. The unit will retry once in the time-out time before displaying this error.

0x0040 Panel register xxxx is read only

This error will occur if an attempt to write to a read only register in the PLC is made.

0x0080 Invalid PLC attributes using defaults

This error occurs if there are problems with the PLC attributes.

0x0100 Max node address less than Panel address

This error will occur if the maximum node address is less than the address of the panel. The maximum node address must be made equal to or greater than the address for the panel on the network.

0x0200 STS xx EXTSTS xx Errors from PLC xx

This error will occur if the unit receives an error message from the PLC in response to the command it sent. Check your Allen-Bradley protocol manual for the error codes.

0x0400 Panel only active node on network

This error occurs when the panel is the only active node on the DH485 network. The panel will display this error until another panel or PLC is into the network.

0x0800 PLC address xx out of range

This error occurs if a PLC address entered in the map is greater than the max node address entered in the PLC attributes. To correct this problem, either set max node address higher in the PLC attributes or set the PLC address in the map to a lower PLC address.

0x1000 PLC address equals Panel address

This will occur if a PLC address in a map string is the same as the panel address entered in the PLC attributes. To correct this problem enter a valid PLC address in the map entry or set the Panel address to a unique node address.

0x2000 Panel not being solicited

This error occurs if the panel is on the network but is not being solicited with a connect message. To correct this problem check the maximum node address setting in the PLC or Panel with highest address. This error will not appear on the screen until 10 seconds after the panel is on the network.

Time-out Errors

The time-out time specifies the amount of time the panel will wait for a reply to a message before triggering an error. Each message sent to the PLC must be acknowledged by the PLC. The acknowledgment must be received within a certain amount of time. If an acknowledgment is not received, the driver will retry the message. After the message has been sent twice with no response, the driver will report a time-out. If the panel is constantly displaying time-out errors or communication errors, the time-out time or poll time may have to be increased. Only the Panel is allowed to communicate with the SLC500-20, 20- or 40 series PLCs. These PLCs can only handle one or two messages at a time, and if more than one Panel is trying to communicate, errors will occur. A panel and a program loader can be connected to this series of PLCs without errors occurring. The amount of information being requested from the Panel and the amount of activity on the DH485 network can affect the response time of a message.

Driver Errors for Micrologix/SLC 500 with DF1 Half Duplex Protocol

0x0000 No error

0x0001 Incompatible Revision

This error will be displayed when the driver and exec have incompatible revision.

0x0002 PLC error incorrect map size

This error occurs when an incompatible map is loaded into the unit. The driver will not attempt to communicate with the PLC when this occurs.

0x0004 Limit of elements per screen exceeded

This occurs when there are too many register on the display that can be monitored.

0x0008 PLC MSG time-out CMD=X

This error occurs when the unit does not receive a reply to its command. The unit will retry a command and wait for the specific time-out period before reporting this command. The command ID causing this error is reported. CMD 0xAA=READ CMD 0XA2=WRITE.

0x0010 Invalid PLC attributes - using defaults

This will occur if the PLC driver receives an invalid set of attributes. The default attributes will be used when this occurs.

0x0020 PLC bad checksum CMD=X

This occurs when a reply with an invalid checksum is received by the unit. The command ID of the command that incurred the error is reported as part of the message. CMD 0XAA=Read CMD 0XA2=Write.

0x0040 PLC Error STS=XX EXTSTS=XX CMD=ZZ

This is reported when a controller responds to a command with an error. The error code is shown and can be looked up in the Allen-Bradley documentation. The command ID of the command causing the error is reported. CMD 0XAA=Read, CMD 0XA2=Write.

0x0080 PLC Nack Error

This error is reported when a controller responds to a command with a negative acknowledgment.

0x0100 PLC element read-only

This is reported when an attempt is made to write to an element with a read-only map entry. Read-only map entries are: input file, output file, and all discrete entries. The driver can only read discrete entries, it cannot write to a single bit within a word.

0x0200 PLC TX buffer full

The error is reported if the transmit buffer becomes full in the PLC driver.

0x0400 PLC error no reply

This occurs when the DF1 modules indicate the PLC has no reply to the last message. It is usually displayed when the unit reestablishes communications after a PLC message time-out error. This can also occur when the panel message time-out is too short. If the PLC message time-out does not give the PLC enough time to respond to the message this error will be displayed.

0x0800 Error code xx

This is reported when the PLC driver encounters an unknown error. This should never occur.

Driver Errors for PLC5 with DF1 Protocol

0x0000 No error

0x0001 Incompatible Revision

This error will be displayed when the driver and exec have an incompatible revision.

0x0002 PLC error incorrect map size

This error occurs when an incompatible map is loaded into the unit. The driver will not attempt to communicate with the PLC when this occurs.

0x0004 Limit of elements per screen exceeded

This occurs when there are too many registers on the display to be monitored. The number of registers on the display must be reduced.

0x0008 PLC MSG Time-out CMD=X

This occurs when the unit does not receive a reply to its command. The unit will retry a command and wait for the specified time-out period before reporting this command. The command ID causing the error is reported.

0x0010 Invalid PLC attributes - using defaults

This error is reported when the PLC driver receives an invalid set of PLC attributes. The default attributes will be used when this error occurs.

0x0020 PLC Bad checksum CMD=X

This error occurs when a reply with an invalid checksum is received by the unit. The command ID of the command that incurred the error is reported as part of the message.

0x0040 PLC Error STS=xx EXTSTS=yy CMD=zz

This error is reported if a controller responds to a command with an error. The error code is shown and can be looked up in the Allen-Bradley documentation. The command ID of the command causing the error is reported.

0x0080 PLC Nack Error

This error is reported if a controller responds to a command with a negative acknowledgment error.

0x0100 PLC Element Read Only

This error is reported if an attempt is made to write to an element with a read only map entry. Read only map entries are: INPUT file, OUTPUT file, and the control word of TIMERS, COUNTERS, and CONTROL structures.

0x0200 PLC Transmit Buffer Full

The error is reported if the transmit buffer becomes full in the PLC driver.

0x8000 Error Code XX

This error is reported when the PLC driver encounters an unknown error. This should never occur.

Time-outs

This specifies the amount of time the panel will wait for a reply to a message before triggering an error. Each message sent to the PLC must be acknowledged by the PLC. The acknowledgment must be received within the time-out period. After the message has been sent twice with no response, the time-out message will be displayed.

Driver Errors for Micrologix/SLC 500 with DF1 Full Duplex Protocol

0x0000 No error

0x0001 Incompatible Revision

This error will be displayed when the driver and exec have incompatible revision.

0x0002 PLC error incorrect map size

This error occurs when an incompatible map is loaded into the unit. The driver will not attempt to communicate with the PLC when this occurs.

0x0004 Limit of elements per screen exceeded

This occurs when there are too many register on the display that can be monitored.

0x0008 PLC MSG time-out CMD=X

This error occurs when the unit does not receive a reply to its command. The unit will retry a command and wait for the specific time-out period before reporting this command. The command ID causing this error is reported. CMD 0xAA=READ CMD 0XA2=WRITE.

0x0010 Invalid PLC attributes - using defaults

This will occur if the PLC driver receives an invalid set of attributes. The default attributes will be used when this occurs.

0x0020 PLC bad checksum CMD=X

This occurs when a reply with an invalid checksum is received by the unit. The command ID of the command that incurred the error is reported as part of the message. CMD 0XAA=Read CMD 0XA2=Write.

0x0040 PLC Error STS=XX EXTSTS=XX CMD=ZZ

This is reported when a controller responds to a command with an error. The error code is shown and can be looked up in the Allen-Bradley documentation. The command ID of the command causing the error is reported. CMD 0XAA=Read, CMD 0XA2=Write.

0x0080 PLC Nack Error

This error is reported when a controller responds to a command with a negative acknowledgment.

0x0100 PLC element read-only

This is reported when an attempt is made to write to an element with a read-only map entry. Read-only map entries are: input file, output file, and all discrete entries. The driver can only read discrete entries, it cannot write to a single bit within a word.

0x0200 PLC TX buffer full

The error is reported if the transmit buffer becomes full in the PLC driver.

0x0400 PLC error no reply

This occurs when the DF1 modules indicate the PLC has no reply to the last message. It is usually displayed when the unit reestablishes communications after a PLC message time-out error. This can also occur when the panel message time-out is too short. If the PLC message time-out does not give the PLC enough time to respond to the message this error will be displayed.

0x0800 Error code xx

This is reported when the PLC driver encounters an unknown error. This should never occur.

Driver Errors for Data Highway Plus

NO_ERROR	0
INVALID_WRITE	1
MSG_TIMEOUT	2
OPTION_BRD_ERROR	3
REGISTER_READ_ONLY	4
BAD_ADDRESS	5
COMM_ERROR	6

STATUS_ERROR	**7**
INVALID_CARD_ERROR	**8**
INVALID_DRIVER_STATE	**9**
GENERAL_ERROR	**10**
LAST_ERROR	**11**

Error 0: NO_ERROR
Screen Message: N/A
Condition: Never will occur

Error 1: INVALID_WRITE
Screen Message: **INVALID WRITE TO REGISTER: oo-Nxxx::yyyy**
Condition: If writing a value to a T or R and the values id greater than 0x7FFF or value is less than 0.
If writing to a T, C, or R and the value is a DISCRETE

Error 2: MSG_TIMEOUT
Screen Message: **PLC COMMUNICATION TIMEOUT**
Condition: Driver timed out while waiting for a reply to a transmission

Error 3: OPTION_BRD_ERROR
Screen Message: **OPTION BOARD CONFIGURATION ERROR**
Condition: While resetting the card failed to load code from prom to RAM
While resetting the card failed to reach a waiting to transmit condition
While resetting the card failed to indicate restart was successful
While taking the card offline, the card failed to reach a waiting to ransmit condition

Error 4: REGISTER_READ_ONLY
Screen Message: **OI REGISTER IS READ ONLY: oo-Nxxx:yyyy**
Condition: If writing to I or O

Error 5: BAD_ADDRESS
Screen Message: **BAD ADDRESS: oo-Nxxx:yyyy**
Condition: If writing to SLC500 and the file address is greater than 255 or the word address is greater than 255.
If reading from SLC500 and the file address is greater than 255 or the word address is greater than 255

Error 6: COMM_ERROR
Screen Message: **COMMUNICATION ERRORS**
Condition: Driver timed out while waiting for a reply to a transmission
Card was not in a waiting to transmit condition during an attempted transmission

Error 7: STATUS_ERROR
Screen Message: **STS xx EXT_STS xx ERRORS FROM PLC xx**
Condition: PLC's reply to a read message returned a status error
PLC's reply to a write message returned a status error

Error 8: INVALID_CARD_ERROR
Screen Message: **INVALID OR NO OPTION BOARD**
Condition: Invalid or no card found during restart

Error 9: INVALID_DRIVER_STATE
Screen Message: **INVALID DRIVER STATE**
Condition: Driver reached an invalid state during a write
Driver reached an invalid state during a read

Error 10: GENERAL_ERROR
Screen Message: **ERROR CODE xxx**
Condition: Never should occur

Error 11: LAST_ERROR
Screen Message: N/A
Condition: Never would occur

Driver Errors for Remote I/O

NO_ERROR	**0**
OPTION_BRD_ERROR	**1**
INVALID_CARD_ERROR	**2**
RACK_ERROR	**3**
NO_RACK	**4**
PROGRAM_MODE_ERROR	**5**
NO_WORD_ERROR	**6**
NO_COMM_ERROR	**7**
NONACTIVE_QUARTER_ERROR	**8**
NONACTIVE_BTR_ERROR	**9**
NONACTIVE_QUARTER_32_ERROR	**10**
NONACTIVE_QUARTER_R32_ERROR	**11**
GENERAL_ERROR	**12**
INVALID_DRIVER_STATE	**13**
LAST_ERROR	**14**

Error 0: NO_ERROR
Screen Message: N/A
Condition: Never will occur

Error 1: OPTION_BRD_ERROR
Screen Message: **OPTION BOARD CONFIGURATION ERROR**
Condition: While resetting the card failed to load code from PROM to RAM.
While resetting the card failed to indicate it is present and running.
While resetting the card failed to indicate restart was successful.

Error 2: INVALID_CARD_ERROR
Screen Message: **INVALID OR NO OPTION BOARD**
Condition: Invalid or no card found during restart.

Error 3: RACK_ERROR
Screen Message: **RACK STATUS: RACK ERROR: T: aabg-ww / bb "tag map string"**
Condition: While reading or writing a tag, the PLC indicated a rack error. The PLC sees no response from this rack in this map string.

Error 4: NO_RACK
Screen Message: **NO RACK ERROR: T: aabg-ww / bb "tag map string"**
Condition: When reading or writing a tag, the PLC indicated that the rack in this map string is not present.

Error 5: PROGRAM_MODE_ERROR
Screen Message: **PLC IN PROGRAM MODE: T: aabg-ww / bb "tag map string"**
Condition: When reading or writing a tag, the PLC indicated that it was in program or test mode.

Error 6: NO_WORD_ERROR
Screen Message: **WORD NOT IN BTX: T: aabb-ww / bb "tag map string"**
Condition: When reading from the BTX specified in the map string, the word number was not found in the BTR, or the length of the tag element was longer than the specified BTX.

Error 7: NO_COMM_ERROR
Screen Message: **NO COMM ERROR**
Condition: When reading or writing the Remote I/O interface card indicated that it has not received a valid message from the PLC within a period of 160 milliseconds.

Error 8: NONACTIVE_QUARTER_ERROR
Screen Message: **WRITE TO NONACTIVE QUARTER: T: aabg-ww / bb "tag map string"**
Condition: When writing to the quarter specified by the group in the map string, the PLC indicated that this quarter was not active.

Error 9: NONACTIVE_BTR_ERROR
Screen Message: **WORD NOT IN BTR: T: aabg-ww / bb "tag map string"**
Condition: When writing to the BTR specified in the map string, the word number was not found in the BTR, or the length of the tag element was longer than the specified BTR.

Error 10: NONACTIVE_QUARTER_32_ERROR
Screen Message: **WRITE TO NONACTIVE INPUT QTR: T: aabg-ww / bb "tag map string"**
Condition: When writing a 32 bit or string value to an Input, the value was either mapped to a nonactive quarter or out of the range for the rack specified by the map string.

Error 11: NONACTIVE_QUARTER_R32_ERROR
Screen Message: **NONACTIVE_QUARTER_R32_ERROR**
Condition: When reading a 32-Bit or string value from an Input or Output, the value was out of the range for the rack specified by the map string.

Error 12: GENERAL_ERROR
Screen Message: **ERROR CODE xxx**
Condition: Never should occur

Error 13: INVALID_DRIVER_STATE
Screen Message: **INVALID DRIVER STATE**
Condition: Driver reached an invalid state during a write.
Driver reached an invalid state during a read.

Error 14: LAST_ERROR
Screen Message: N/A
Condition: Never would occur.

Aromat PLC WITH MEWTOCOL COM PROTOCOL

Error 0: NO_ERROR
Screen Message: **N/A**
Condition: NEVER WILL OCCUR

Error 1: INVALID_ATTRIBUTES
Screen Message: **INVALID PLC ATTRIBUTES - USING DEFAULTS**
Condition: If attributes do not exist or there are less than the original number of attributes.

Error 2: MSG_ERR
Screen Message: **INVALID PLC RESPONCE: Txxxxx[,xxx][/BB]**
Condition: The Driver did not receive the reply from the PLC that it expected.

Error 3: PLC_TIMEOUT
Screen Message: **PLC TIMEOUT**
Condition: The Driver did not receive a reply to a message in the allowed time.

Error 4: BCC_ERR
Screen Message: **CHECKSUM ERROR**
Condition: Command string was not sent from the Panel to the PLC correctly, or the checksum in the message was incorrect.

Error 5: FMT_ERR
Screen Message: **FORMAT ERROR**
Condition: Command string was missing characters or some were incorrect.

Error 6: NOT_ERR
Screen Message: **NOT SUPPORT ERROR**

Condition: Command from Panel does not exist on the PLC.

Error 7: PRO_ERR
Screen Message: **PROCEDURE ERROR**
Condition: Command was sent to the PLC while it was still processing an existing command.

Error 8: WRONG_STN_ERR
Screen Message: **WRONG STATION REPLIED TO MSG**
Condition: The received message contained a different station number from the message the driver sent.

Error 9: CSUM_ERR
Screen Message: **INCORRECT CSUM FROM PLC**
Condition: The received message from the PLC had a bad checksum.

Error 10: INVALID_DRIVER_STATE
Screen Message: **INVALID DRIVER STATE**
Condition: NEVER SHOULD OCCUR.

Error 11: GENERAL_ERROR
Screen Message: **ERROR CODE xxx**
Condition: NEVER SHOULD OCCUR.

Error 12: LAST_ERROR
Screen Message: **N/A**
Condition: NEVER WOULD OCCUR

CTC PLC WITH BINARY PROTOCOL

Error 0: NO_ERROR
Screen Message: **N/A**
Condition: Never will occur

Error 1: INVALID_ATTRIBUTES
Screen Message: **INVALID PLC ATTRIBUTES - USING DEFAULTS**
Condition: The error will be displayed if attributes do not exist or there are less than the original number of attributes.

Error 2: RECEIVED_BAD_CHECKSUM
Screen Message: **INVALID CHECKSUM RECEIVED: (Txxxxx [,xxx] [/BB]**
Condition: This error will be displayed if a message received from the PLC has a bad checksum.

Error 3: SENT_BAD_CHECKSUM
Screen Message: **INVALID CHECKSUM SENT: (Txxxxx [,xxx] [/BB]**
Condition: This error will be displayed if the driver sent the PLC a message with a bad checksum.

Error 4: ILLEGAL_REG_READ
Screen Message: **INVALID REGISTER READ: (Txxxxx [,xxx] [/BB]**

Condition: This error will be displayed if the PLC indicated that the driver attempted to read a register with an invalid address.

Error 5: ILLEGAL_REG_WRITE
Screen Message: **INVALID REGISTER WRITE: (Txxxxx [,xxx] [/BB]**
Condition: This error will be displayed if the PLC indicated that the driver attempted to write to a register with an invalid address.

Error 6: VAL_OUT_RANGE
Screen Message: **VALUE OUT OF RANGE: (Txxxxx [,xxx] [/BB]**
Condition: This error will be displayed if the driver attempted to write to a value than was out of range.

Error 7: MSG_ERR
Screen Message: **INVALID PLC RESPONSE: (Txxxxx [,xxx] [/BB]**
Condition: This error will be displayed if the driver did not receive the reply from the PLC that it expected.

Error 8: DT_ELEM_NOT_FOUND
Screen Message: **DATA TABLE VALUE NOT FOUND: (Txxxxx [,xxx] [/BB]**
Condition: This error will be displayed if the driver found a tag that does not exist on the data table. For example, the Row or Column number was out of the range of the PLC's data table limits.

Error 9: PLC_TIMEOUT
Screen Message: **PLC TIMEOUT**
Condition: This error will display if the driver did not receive a reply to a message in the allowed time.

Error 10: DT_STRING_OUT_BOUNDS
Screen Message: **MESSAGE STRING OUT OF BOUNDS: (Txxxxx [,xxx] [/BB]**
Condition: This error will display if the driver found a tag that does not exist on the data table. For example, the message string included a column number that was out of the range of the PLC's data table limits.

Error 14: INVALID_DRIVER_STATE
Screen Message: **INVALID DRIVER STATE**
Condition: Never should occur.

Error 15: GENERAL_ERROR
Screen Message: **ERROR CODE xxx**
Condition: Never should occur.

Error 16: LAST_ERROR
Screen Message: **N/A**
Condition: Never should occur.

DIRECTLOGIC PLCS

K-Sequence Protocol/Direct Logic PLC Models: DL05, DL105, D2-230, D2-240, D2-250, D3-350, D4-430, D4-440, D4-450

0x0000 No Error

0x0001 Incompatible Revision

This error will be displayed when the driver and exec have an incompatible revision.

0x0002 Limit of elements per screen exceeded.

This occurs when there are too many registers on the display to monitor.

0x0004 Invalid Checksum

This error occurs when a message with an invalid checksum is received by the unit. The unit is receiving invalid data.

0x0008 Protocol Error

The driver has received a serial communications protocol error from the PLC. The driver is unable to communicate with the PLC when this error occurs.

0x0040 PLC Error Incorrect Map Size

An incompatible map has been loaded into the unit. The driver will not attempt to communicate with the PLC when this error occurs.

0x0080 Invalid write to panel register nnn

A write was attempted to the panel's internal register nnnn when that register is mapped to a read-only location in the PLC.

0x0100 PLC Communications Timeout

The panel is unable to communicate with the PLC.

0x0200 Invalid attributes - using defaults

The driver received attributes it could not use. The default values for all PLC attributes will be used.

DirectNet Protocol (except DL330/340)/ Direct Logic PLC Models: DL05, D2-240, D2-250, D2-240/250 DCM, D3-350, D3-350 DCM, D4-430, D4-440, D4-450, DL405 Series all with DCM

0x0000 No Error

0x0001 Incompatible Revision

This error will be displayed when the driver and exec have an incompatible revision.

0x0002 Limit of elements per screen exceeded.

This occurs when there are too many registers on the display to monitor.

0x0004 Invalid Checksum

This error occurs when a message with an invalid checksum is received by the unit. The unit is receiving invalid data.

0x0008 Protocol Error

The driver has received a serial communications protocol error from the PLC. The driver is unable to communicate with the PLC when this error occurs.

0x0040 PLC Error Incorrect Map Size

An incompatible map has been loaded into the unit. The driver will not attempt to communicate with the PLC when this error occurs.

0x0080 Invalid write to panel register nnn

A write was attempted to the panel's internal register nnnn when that register is mapped to a read-only location in the PLC.

0x0100 PLC Communications Timeout

The panel is unable to communicate with the PLC.

0x0200 Invalid attributes - using defaults

The driver received attributes it could not use. The default values for all PLC attributes will be used.

ModBus (Koyo Addressing) RTU Protocol/Direct Logic PLC Models: DL05, D2-250, D3-350, D4-450

0x0000 No error

0x0001 Incompatible Revision

This error will be displayed when the driver and exec have an incompatible revision.

0x0002 Limit of elements per screen exceeded

This occurs when there are too many registers on the display to monitor.

0x0004 Reply received from invalid slave nnn

If the driver received a message from a PLC with address nnn when one was not expected.

0x0008 Invalid Checksum Received

This error occurs when a message with an invalid checksum is received by the unit.

0x0010 Incorrect Reply

The driver received an incorrect or unexpected reply from the PLC with address nnn.

0x0020 Error - PLC nnn - <error>

The driver received a ModBus message exception code from the PLC. The <error> strings are:

Illegal Function

The PLC received an invalid function code.

Illegal Data Address

The address requested is not allowable for the PLC. This may appear instead of a time-out when a PLC is in bridge mode to a ModBus Plus network. The PLC that the Panel is communicating with will return this error if the message could not be passed on to the addressed PLC.

Illegal Data Value

The value in the data field is not allowed for the PLC.

Slave Device Failure

An unrecoverable error occurred in the PLC.

Acknowledge

The PLC requires more time to process the message.

Slave Device Busy

The PLC is processing a long command and is not ready for a new one.

Negative Acknowledgment

The PLC cannot perform the function requested.

Memory Parity Error

An error was detected in the PLC memory.

0x0040 Broadcast not allowed in read command

If a broadcast message to read was attempted.

0x0080 PLC time-out - PLC nnn

The panel is unable to communicate with the PLC with address nnn. This may be corrected by increasing the time-out time or increasing the baud rate. An alternative may be to lower the number of registers or coils per message. This causes the panel to use smaller messages, that the PLC should be able to respond to at a faster rate.

0x0100 PLC reply length exceeded - PLC nnn

The driver received, or is receiving a message with a length exceeding the maximum allowed by ModBus protocol from the PLC with address nnn.

0x0200 Invalid write to panel register nnn

A write was attempted to the panel's internal register nnnn when that register is mapped to a read-only location in the PLC.

0x0400 Invalid attributes - using defaults

The driver received attributes it could not use. The default values for all PLC attributes will be used.

DirectNet Protocol DL330, DL340/Direct Logic PLC Models: D3-330/330P, D3-340

0x0000 No Error

0x0001 Incompatible Revision

This error will be displayed when the driver and exec have an incompatible revision.

0x0002 Limit of elements per screen exceeded.

This occurs when there are too many registers on the display to monitor.

0x0004 Invalid Checksum

This error occurs when a message with an invalid checksum is received by the unit. The unit is receiving invalid data.

0x0008 Protocol Error

The driver has received a serial communications protocol error from the PLC. The driver is unable to communicate with the PLC when this error occurs.

0x0040 PLC Error Incorrect Map Size

An incompatible map has been loaded into the unit. The driver will not attempt to communicate with the PLC when this error occurs.

0x0080 Invalid write to panel register nnn

A write was attempted to the panel's internal register nnnn when that register is mapped to a read-only location in the PLC.

0x0100 PLC Communications Timeout

The panel is unable to communicate with the PLC.

0x0200 Invalid attributes - using defaults

The driver received attributes it could not use. The default values for all PLC attributes will be used.

GENERAL ELECTRIC PLCS

0x0000 No error

0x0001 Incompatible Revision

This error will be displayed when the driver and exec have an incompatible revision.

0x0002 Limit of elements per screen exceeded

This occurs when there are too many registers on the display to monitor.

0x0004 PLC Time-out - X = YYYYY

This error results from a loss of communication with a PLC. The X shown stands for the PLC that timed out. This will be a number one through 16 or default. The YYYYY stands for the actual SNP-X ID string entered for the PLC that timed out. If the SNP-X ID string is a null string, the space after the equal sign will be the last character in the error string.

0x0008 Invalid PLC Attributes - using default

The attributes passed from the program loader, or the existing attributes in memory do not match those expected by the driver. The default attributes will be used and normal operations will commence.

0x0010 Invalid Write to panel register xxx

There was an attempted write to panel internal register number xxx which is mapped to an address which has read-access only.

0x0020 PLC Message Error

A communications error occurred which resulted in an invalid message. It could also indicate that an address was requested which is out of the range limits of the PLC.

0x0040 Incorrect Map Size

This error occurs when a map is stored that is not the size the PLC expects.

IDEC PLC WITH COMPUTER LINK PROTOCOL

Error 1: INVALID PLC ATTRIBUTES - USING DEFAULTS

This error is reported when the PLC driver receives an invalid set of PLC attributes. The default

attributes will be used when this error occurs.

Error 2: PLC TIMEOUT

The Driver did not receive a reply to a message in the allowed time. Check the communication between panel and PLC.

Error 3: DATA RANGE ERROR

This error occurs when response from PLC to read or write had a data range error.

Error 4: T/C PRESET CHANGE

This error occurs when response from plc for an invalid, present value is written to timer or counter.

Error 5: CALENDAR/CLOCK DATA

This error occurs when invalid data is sent to calendar or clock. Command was sent to the PLC while it was still processing an existing command.

Error 6: WRONG STATION REPLIED TO MSG

The received message contains a different station number from the message that the driver sent from panel.

Error 7: INCORRECT CSUM FROM PLC

Error 8: BCC ERROR

The calculated Check sum from the panel did not match with the value that PLC received in a message.

Error 9: FRAME ERROR

Number of bits received by the PLC differs from the preset value (stop bit is 0 for example).

Error 10: DATA SEND/RECEIVE ERROR

Parity error or overrun error occurred on PLC.

Error 11: COMMAND ERROR

Unsupported request message is received

Error 12: PROCEDURE/DATA QUANTITY ERROR

Received request message for the panel does not match the expected data (including quantity of data).

MITSUBISHI PLCs

0x0001 Incompatible Revision

This error will be displayed when the driver and exec have incompatible revision.

0x0002 Limit of elements per screen exceeded

This occurs when there are too many elements on the display to monitor.

0x0004 Communications Error

This error occurs when there is an error involving communications between the panel and PLC. A communications error results from one of the following: no or bad physical connection between panel and PLC, bad checksum in reply from the PLC, bad checksum in command from the panel, bad command from the panel, bad format of command from the panel, or unexpected reply from the PLC.

0x0010 Invalid Write - Panel register : xxxx

This error will occur when an attempt to write to a read only MFX element. The panel register xxxx contains the address of the MFX element that is read-only.

0x0020 PLC Message Time-out

This message occurs when the unit does not receive a reply to its command. The unit will retry a command and wait for the specified time-out period before reporting this command.

0x0040 Invalid PLC attributes - using defaults

This error is reported when the PLC driver receives an invalid set of PLC attributes. The default attributes will be used when this error occurs.

Timeouts

The timeout time specifies the amount of time the panel will wait for a reply to a message before triggering an error. Each message sent to the PLC must be acknowledged by the PLC. The acknowledgment must be received within the time-out period. If the acknowledgment is not received the driver will retry the command. After the message has been sent twice with no response, the time-out error message will be posted.

MODICON PLC WITH MODBUS RTU PROTOCOL

0x0000 No error

0x0001 Incompatible Revision

This error will be displayed when the driver and exec have an incompatible revision.

0x0002 Limit of elements per screen exceeded

This occurs when there are too many registers on the display to be monitored. The number of registers on the display must be reduced.

0x0004 Reply received from invalid slave nnn

If the driver received a message from a PLC with address nnn when one was not expected.

0x0008 Invalid Checksum Received

This error occurs when a message with an invalid checksum is received by the unit.

0x0010 Incorrect Reply

The driver received an incorrect or unexpected reply from the PLC with address nnn.

0x0020 Error - PLC nnn - <error>

The driver received a Modbus message exception code from the PLC. The <error> strings are:

Illegal Function

The PLC received an invalid function code.

Illegal Data Address

The address requested is not allowable for the PLC. This may appear instead of a time-out when a PLC is in bridge mode to a Modbus Plus network. The PLC that the panel is communicating with will return this error if the message could not be passed on to the addressed PLC.

Illegal Data Value

The value in the data field is not allowed for the PLC.

Slave Device Failure

An unrecoverable error occurred in the PLC.

Acknowledge

The PLC requires more time to process the message.

Slave Device Busy

The PLC is processing a long command and is not ready for a new one.

Negative Acknowledgment

The PLC cannot perform the function requested.

Memory Parity Error

An error was detected in the PLC memory.

0x0040 Broadcast not allowed in read command

If a broadcast message to read was attempted.

0x0080 PLC time-out - PLC nnn

The panel is unable to communicate with the PLC with address nnn. This may be corrected by increasing the time-out time or increasing the baud rate. An alternative may be to lower the number of registers or coils per message. This cause the panel to use smaller messages, which the PLC should be able to respond to at a faster rate.

0x0100 PLC reply length exceeded - PLC nnn

The driver received, or is receiving a message with a length exceeding the maximum allowed by Modbus protocol from the PLC with address nnn.

0x0200 Invalid write to Panel register nnn

A write was attempted to the panel's internal register nnnn when that register is mapped to a read-only location in the PLC.

0x0400 Invalid attributes - using defaults

The driver received attributes it could not use. The default values for all PLC attributes will be used.

MODICON PLC WITH MODBUS PLUS PROTOCOL

0x0000 No error

0x0001 Incompatible Revision, Need Exec rev.

This error will be displayed when the driver and exec have an incompatible revision.

0x0002 Limit of elements per screen exceeded

This occurs when there are too many registers on the display to be monitored. The number of registers on

the display must be reduced.

0x0003 Board did not restart
This message occurs when the software on the option board was unable to start.

0x0004 Modbus Plus Command xx time-out
This occurs when a command to the option board times out. The Modbus Plus command that timed out is xx.

0x0005 Board Crashed cmd cc, code ee, state ss
This error occurs when the option board code crashes. The command it crashed on is in cc, the crash code is in ee, and state of the software is ss.

where cc = (processor command)
- 0x00 - get service request
- 0x01 - put master command to output path
- 0x04 - get master response from output path
- 0x05 - abort transaction
- 0x06 - configuration status
- 0x07 - interface diagnostic
- 0x08 - software reset
- 0x09 - put global data
- 0x0A - get global data

0x0006 Incompatible/NO option board present
This occurs when the driver can not identify a Modbus Plus option board.

0x0007 Routing failure node nn error ee
This occurs when Modbus Plus software seed a routing failure error. The routing failure error code in ee and is from node nn.

where ee = (routing failure error conditions)
- 01h - no response received
- 02h - program access denied

04h - exception response received
- 08h - invalid node type in routing path
- 10h - slave rejected the Modbus command
- 20h - initiated transaction forgotten by slave
- 40h - unexpected master output path received
- 80h - unexpected response received

0x0008 Modbus Plus cmd pp exception, Modbus Plus cc
This error occurs when an exception response is returned to Modbus Plus command pp via a Modbus command of cc.

0x0009 Invalid write to Panel register r
This error occurs when an attempt is made to write to a register r when r is mapped to a read-only PLC element.

0x000A Path busy msg 11 22 33 44 55
This occurs when the first five bytes of a message 11 22 33 44 55 are attempted to be sent out a busy Modbus Plus path.

0x000B PLC message timed-out

This occurs when a no reply or error is seen within the time-out time in the Panel PLC attributes. If the Panel is displaying time-out errors, the time-out may need to be increased.

0x000C No communication with any other node
This occurs when the Modbus Plus software reports it never gets the token or it is the sole station.

0x000D Duplicate Node seen
This will occur when the Modbus Plus software reports a duplicate station.

0x000E Invalid PLC attributes

0x000F PLC Error Incorrect Map Size

0x0010 PUT GLB DATA
This will occur when the Global register used is greater than the number of global registers declared.

0x0011 General Error

OMRON HOST LINK PLCs

0x0000 No error

0x0001 Incompatible Revision
This error will be displayed when the driver and exec have an incompatible revision.

0x0002 Limit of elements per screen exceeded
This occurs when there are too many registers on the display to monitor.

MODICON PLC WITH MODBUS TCP/IP PROTOCOL

Error 1: “Missed at least one frame”
The EZEthernet Card did not see one or more page mode requests from the Panel. The user should re-attempt the previous operation. If the problem persists, please contact Technical Support.

Error 2: “Adapter could not lock Shared Ram”
The EZEthernet Card was denied a request to lock one or more internal data transfer buffers. This prob lem is considered critical and may require a panel reset to restore proper operation. If the problem persists, please contact Technical Support.

Error 3:”Node ID ???? is not responding”
The Node with Module ID ???? is not responding to the EZEthernet card. If seen by the user, this mes sage will immediately be replaced by the more generic “Plc ? is Offline” (where ? is the Node ID as con figured in the EZEthernet configuration utility. The user should check both the physical and logical link be tween the Panel and the PLC.

Error 4: “Invalid tag type”
Internal error that indicates the EZEthernet Card was given a tag to process in which the tag type is in valid. Operations on that tag only will be halted. This might indicate a corrupt EZ Series Project tag database.

Error 5: "Could not append pointer table"
The EZEthernet card encountered a fatal internal error. The user should reset the panel. If the problem persists, the user should contact Technical Support.

Error 6: "Could not build transactions"
The EZEthernet card encountered a fatal internal error. The user should reset the panel. If the problem persists, the user should contact Technical Support.

Error 7: "No nodes defined"
The panel is attempting to obtain information for a program in which the EZEthernet Card is not configured to process. This error would most likely be seen if the user placed a factory EZEthernet Card into a Panel that has an existing program. The user should configure the EZEthernet card to eliminate this problem.

Error 8: "No Items to process"
The EZEthernet Card attempted either a read or a write tag operation when there were no valid tags to process. User should retry the operation. If the problem persist, the user should contact Technical Support.

Error 9: "No gateway address"
Attempt was made to communicate with a node that is located behind a router, but no gateway address was configured for the device. The user should add the appropriate gateway IP address to the node in the EZEthernet Card Configuration Utility and download the new configuration to the panel.

Error 10: "Tag references non-existing node"
An error condition in which the panel is requesting service for a tag that does not have a corresponding node configured in the EZEthernet internal node configuration table. The user should either delete the tag or configure a node for the tag.

Error 11: "No valid address for node"
The EZEthernet Card was not able to use the configured ECOM information to contact an ECOM device. The user should re-check the EZEthernet node configuration.

Error 12: "Node ID is offline; Reason"
Not used in this release.

Error 13: "Node ID is offline; Reason unknown"
Not used in this release
(Error number 14 is not used.)

Error 15: "Node ID ???? : No more ecom buffers"
A condition in which EZEthernet Card requests are being discarded by the node indicated by ???? because the ECOM transaction buffers are saturated. The user should reduce the load on the ECOM by optimizing panel screens and/or removing panels configured to talk through that ECOM.

Error 16: "Program Segment packet timeout"
An exchange between the EZ Series Touch Panel Program Loader and the corresponding EZEthernet Card was not completed in the time-out period specified in the EZEthernet Configuration Utility. The user should retry the operation. If this error occurs frequently, the user should increase the time-out setting.

Error 17: "Could not write point"
A EZEthernet adapter was unable to process a tag write request. The user should retry the operation. If the problem persists, the user should contact Technical Support.

Error 18: "Tag scan off. Cannot complete Operation"
Not used in this release.

Error 19: "Critical. No more transaction buffers"
The EZEthernet Card has exceeded its resources attempting to handle the tags for a given panel screen. The user should spread the tags across screens to prevent is error.

Error 20: "Packet send error"
Generic error that occurs if the EZEthernet Adapter cannot send an Ethernet packet. If the problem persists, the user should contact Technical Support.

Error 21: "Read Transaction failed"
The EZEthernet Card was unable to process an incoming tag data response from a node. If the problem persists, the user should contact Technical Support.
(Error number 22 is not used.)

Error 23: "Discrete Value must be 0 or 1"
The EZEthernet was instructed to perform a discrete operation on a tag that had a non-binary (0 or 1) value. This would happen only if the panel tag database is corrupt.

Error 24: "Attempted operation on NULL pointer"
Internal EZEthernet Card Error. If this error persist, check EZ Series Project and the EZEthernet configuration.

Error 25: "Could not build internal arrays"
Fatal internal EZEthernet Adapter error. Please call Technical Support.

Error 26: "Did not receive response from tag write"
The EZEthernet Card sent one or more tag write requests that did not respond within the time out period. The user should re-send the request. If the problem persists, the user should increase the timeout period for the corresponding node using the EZEthernet Configuration Utility.

Error 27: "Adapter write Queue Overflow"
The EZEthernet can normally process up to twenty-five multiple write requests simultaneously. However, under some situations, the write queue could be over run with requests. The user should ensure that the network has significant bandwidth to handle the traffic.

Error 28: "Adapter Read Queue Overflow"
Not used in this release.

Error 29: "Direct Net send request failed"
The EZEthernet Card was unable to send a Koyo DirectNet protocol packet. Contact Technical Support.

Error 30: "K-Sequence send request failed"
The EZEthernet Card was unable to send a Koyo K-Sequence protocol packet. Contact Technical Support.

Error 31: "K-Sequence negative response"
The EZEthernet Card received an error response from the targeted slave node.

Error 32: "Write tag retry count exceeded"
The EZEthernet Card was unable to successfully process a user tag write request. This occurs only after the attempt failed for the number of retries specified for the node in the EZEthernet Configuration Utility. This error normally indicates a network problems. The user should adjust the node's timeout and retry settings until this error is no longer seen.

Error 33: "Exceeded system tag limit"

The EZEthernet adapter was told to process a single screen of data that contained more than the tag limit (500 tags/screen for reads, 25 tags/request on writes). The user should spread some of the tags across a second screen.

Error 34: "PLC not in TERM; Tag write inhibited"
The user attempted to write a tag when the target PLC's switch was not set to "Terminal". The user should place the switch in Terminal mode so writes can be processed. The inhibited write must be re-issued after the PLC is placed in Terminal mode.
Error 35: "Node using an invalid protocol"
Attempt to use protocol other than IPX/IP/HOST.

MODICON PLS WITH UNI TELWAY PROTOCOL

Error 0: NO_ERROR
Screen Message: N/A
Condition: NEVER WILL OCCUR

Error 1: INVALID_ATTRIBUTES
Screen Message: INVALID PLC ATTRIBUTES
Condition: You will receive this message if attributes do not exist or there are less than the original number of attributes.

Error 2: PLC_TIMEOUT_NP
Screen Message: PLC TIMEOUT_NP
Condition: The Driver did not get polled to send a message in the allowed time (see Timeout in attributes).

Error 3: PLC_TIMEOUT_NM
Screen Message: PLC TIMEOUT, NO MSG
Condition: The Driver did not receive a reply to a message in the allowed time (see Timeout in attributes).

Error 4: BAD_MODULE
Screen Message: INCORRECT MODULE REPLIED: DA:TTrrrrr[/BB]
Condition: The Driver received a reply to a message from the incorrect module.

Error 5: BAD_CHANEL
Screen Message: INCORRECT CHANNEL REPLIED: DA:TTrrrrr[/BB]
Condition: The Driver received a reply to a message from the incorrect channel.

Error 6: SERVICE_MSG
Screen Message: REQUEST NOT PROCESSED: DA:TTrrrrr[/BB]
Condition: The Driver's last message was not processed by the server.

Error 7: BAD_READ_REPLY
Screen Message: INCORRECT REPLY TO READ: DA:TTrrrrr[/BB]
Condition: The driver did not receive the reply it expected for a read.

Error 8: BAD_WRITE_REPLY
Screen Message: INCORRECT REPLY TO WRITE: DA:TTrrrrr[/BB]
Condition: The driver did not receive the reply it expected for a write.

Error 9: NEG_CONFIRM

Screen Message: NEG CONFIRM. OF REQUEST: DA:TTrrrrr[/BB]
Condition: The operation could not be executed by the server; unknown request, value out of range, configuration absent, etc.

Error 10: VAL_NOT_READ
Screen Message: REG NOT RETURNED IN READ: DA:TTrrrrr[/BB]
Condition: The driver expected a value for a register, but it was not contained in the read reply from the server — may occur during a read or a read-modify-write sequence.

Error 11: INVALID_DRIVER_STATE
Screen Message: INVALID DRIVER STATE
Condition: NEVER SHOULD OCCUR

Error 12: GENERAL_ERROR
Screen Message: ERROR CODE xxx
Condition: NEVER SHOULD OCCUR

Error 13: LAST_ERROR
Screen Message: N/A
Condition: NEVER WOULD OCCUR

OMRON PLC WITH HOST LINK PROTOCOL

0x0000 No error

0x0001 Incompatible Revision
This error will be displayed when the driver and exec have an incompatible revision.

0x0002 Limit of elements per screen exceeded
This occurs when there are too many registers on the display to monitor.

0x0004 Incorrect Unit Response
This will occur when there are too many registers on the display to be monitored. The number of registers on the display must be reduced.

0x0008 PLC Invalid Checksum received
An invalid checksum was received in a message from the PLC.

0x0010 Incorrect reply received
The driver received an incorrect reply from a PLC.

0x0020 Response to an undefined command
The driver received the undefined command response.

0x0040 Command cc Error Response Code xx
This error occurs when a response code xx is returned to a PLC message command of cc.

0x0080 Incorrect Map Size
This error occurs when an incorrect map is stored that is not the correct map entry size the driver expects.

0x0100 Invalid Write to Panel register r
This error occurs when an attempt is made to write to a register r when r is mapped to read-only element.

0x0400 PLC Message Time-out

This error occurs when a no reply or error is seen within the time-out time in the Panel PLC attributes. If the Panel is displaying time-out errors, the timeout may need to be increased.
0x2000 Invalid PLC attributes - using defaults
The driver received attributes it could not use. The default values for all PLC attributes will be used.

GENERIC DEVICENET I/O ERROR CODE DESCRIPTIONS

Driver Generated Errors

Error 0: NO_ERROR

Screen Message: **N/A**

Condition: NEVER WILL OCCUR

Error 1: NO_OPTION_BD

Screen Message: **NO OPTION CARD**

Condition: You will receive this error message if the DeviceNet I/O option card is not present.

Please Note: user should not see this message, instead they should see: Error 11 CARD_INIT_ERROR - “CARD INITIALIZATION PROCESS FAILED”

Error 2: INVALID_ATTRIBUTES

Screen Message: **INVALID ATRIBUTES FROM PROGRAM LOADER**

Condition: You will receive this error message if the driver did not get the expected list of attributes from the Program Loader

Error 3: NOT_INITIALIZED

Screen Message: **CARD INDICATES IT’S NOT INITIALIZED**

Condition: The DeviceNet I/O option card went through its initialization process, however it indicated that it is not initialized.

Please Note: user should not see this message, instead they should see: Error 11 CARD_INIT_ERROR - “CARD INITIALIZATION PROCESS FAILED”

Error 4: DPRAM_FAILURE

Screen Message: **OPTION CARD DUAL PORT RAM FAILED**

Condition: On powerup the dual port RAM test failed.

Please Note: user should not see this message, instead they should see: Error 11 CARD_INIT_ERROR - “CARD INITIALIZATION PROCESS FAILED”

Error 5: INVALID_DRIVER_STATE

Screen Message: **INVALID DRIVER STATE**

Condition: Driver is in an unexpected state — this condition should never occur.

Error 6: ACCESS_UNATTAINABLE

Screen Message: **DRIVER CAN'T ACCESS OPTION CARD DPRAM**

Condition: Driver failed to get the lock on an area in DPRAM while trying to do a read or write.

Error 7: RELEASE_FAILURE

Screen Message: **DRIVER CAN'T RELEASE OPTION CARD DPRAM**

Condition: Driver failed to release the lock on an area in DPRAM while trying to do a read or write.

Error 8: MSG_TIMEOUT

Screen Message: **DRIVER TIMEOUT**

Condition: The DeviceNet I/O option card failed to respond to one of the driver's mailbox init messages.

Error 9: MB_S_TIMEOUT

Screen Message: **TIMEOUT WAITING SEND MAILBOX ACCESS**

Condition: The driver timed out waiting to place a message into the card's mailbox.

Error 10: MB_R_TIMEOUT

Screen Message: **TIMEOUT WAITING RECV MAILBOX ACCESS**

Condition: CURRENTLY, NEVER WILL OCCUR

Error 11: CARD_INIT_ERROR

Screen Message: **CARD INITIALIZATION PROCESS FAILED**

Condition: Occurs when the driver fails to start after power up, or the driver fails to start after a reset. Could be a result of errors 1-10

Error 12: CARD_RW_ERR

Screen Message: **CARD INIT FAILED OR DRIVER STOPPED**

Condition: Driver has attempted to Read or Write from the card after the card's init has failed, or the driver has been stopped.

Error 13: CARD_WD_ERR

Screen Message: **CARD IS DEAD**

Condition: Driver has attempted to Read the watchdog counter, and found it not updating, indicating a card failure.

Error 14: CARD_OL_ERR

Screen Message**: CARD NOT ONLINE**

Condition: Driver has attempted to Read or Write from the card, however, it found the card to be offline.

Error 15: CARD_CN_ERR

Screen Message: **CARD NOT CONNECTED**

Condition: Driver has attempted to Read or Write from the card, however, it found the card was not connected.

Error 16: INVALID_TAG_ERR

Screen Message: **TAG NOT DEFINED IN MEMORY: T : r r r [/ BB]**

Condition: Occurs if the driver encounters a tag during a Read or Write, that does not exist in the user-defined IN or OUT area of the DeviceNet I/O option card

Error 17: TAG_READONLY_ERR

Screen Message: **TAG IS READ ONLY: T : r r r [/BB]**

Condition: Occurs when the driver encounters an OUTPUT tag during a Write and OUTPUT data can't be written to.

Error 18: INVALID_MESSAGE _ID

Screen Message: **INVALID MESSAGE ID**

Condition" The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid message ID.

Error 19 INVALID_MESSAGE_TYPE

Screen Message: **INVALID MESSAGE TYPE**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid message type.

Error 20: INVALID_COMMAND

Screen Message: **INVALID COMMAND**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid command.

Error 21: INVALID_DATA_SIZE

Screen Message: **INVALID DATA SIZE**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid data size in the data that the driver sent in its message.

Error 22: INVALID_FRAME_COUNT

Screen Message: **INVALID FRAME COUNT**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid frame count.

Error 23: INVALID_FRAME_NUMBER

Screen Message: **INVALID FRAME NUMBER**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid frame number.

Error 24: INVALID_OFFSET

Screen Message: **INVALID OFFSET**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid offset.

Error 25: INVALID_ADDRESS

Screen Message: **INVALID ADDRESS**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid address.

Error 26: INVALID_RESPONSE

Screen Message: **INVALID RESPONSE**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid response.

Error 27: FLASH_CONFIG_ERROR

Screen Message: **FLASH CONFIGURATION ERROR**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that there is a flash configuration error.

Error 28: INCORR_IN_IO_LENGTH

Screen Message: **INCORRECT IN I/O LENGTH**

Condition: The option card responded to an Generic Init mailbox message that the driver sent. The option card thinks that the length, as entered in the attributes of the Program Loader, of the INPUT is invalid.

Error 29: INCORR_IN_DPRAM_LENGTH

Screen Message: **INCORRECT IN DPRAM LENGTH**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the length of the INPUT DPRAM is invalid, this length is calculated from the length of the INPUT, as entered in the attributes of the Program Loader.

Error 30: INCORR_IN_TOTAL_LENGTH

Screen Message: **INCORRECT IN TOTAL LENGTH**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the length of the INPUT total length is invalid, this length is calculated from the length of the INPUT, as entered in the attributes of the Program Loader.

Error 31: INCORR_OUT_IO_LENGTH

Screen Message: **INCORRECT OUT I/O LENGTH**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the length, as entered in the attributes of the Program Loader, of the OUTPUT is invalid.

Error 32: INCORR_OUT_DPRAM_LENGTH

Screen Message: **INCORRECT OUT DPRAM LENGTH**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the length of the OUTPUT DPRAM is invalid, this length is calculated from the length of the OUTPUT, as entered in the attributes of the Program Loader.

Error 33: INCORR_OUT_TOTAL_LENGTH

Screen Message: **INCORRECT OUT TOTAL LENGTH**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the length of the OUTPUT total length is invalid, this length is calculated from the length of the OUTPUT, as entered in the attributes of the Program Loader.

Error 34: INCORR_CFG_MOD_STATUS_WD

Screen Message: **INCORRECT CONFIG. MODULE STATUS WORD**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the configuration of the bits in the module status word is incorrect.

Error 35: INCORR_CFG_INT_NOTIFY_WD

Screen Message: **INCORRECT CONFIG. INT. NOTIFICATION WORD**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the configuration of the bits in the Interrupt Notification word is incorrect.

Error 36: INCORR_WDOG_CNTR_DIFF_VAL

Screen Message: **INCORRECT WATCHDOG CNTR DIFFERENCE VAL.**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that there is an incorrect Watchdog Counter difference value.

GENERIC ETHERNET/IP ERROR CODE DESCRIPTIONS

Error 0: NO_ERROR

Screen Message: **N/A**

Condition: NEVER WILL OCCUR

Error 1: NO_OPTION_BD

Screen Message: **NO OPTION CARD**

Condition: If the Ethernet/IP option card is not present

Please Note: user should not see this message, instead they should see: Error 11 CARD_INIT_ERROR - “CARD INITIALIZATION PROCESS FAILED”

Error 2: INVALID_ATTRIBUTES

Screen Message: **INVALID ATRIBUTES FROM PROGRAM LOADER**

Condition: The driver did not get the expected list of attributes from the Program Loader

Error 3: NOT_INITIALIZED

Screen Message: **CARD INDICATES IT’S NOT INITIALIZED**

Condition: The Ethernet/IP option card went through its initialization process however it indicated that it is not initialized.

Please Note: user should not see this message, instead they should see: Error 11 CARD_INIT_ERROR - “CARD INITIALIZATION PROCESS FAILED”

Error 4: DPRAM_FAILURE

Screen Message: **OPTION CARD DUAL PORT RAM FAILED**

Condition: On power up the dual port ram test failed

Please Note: user should not see this message, instead they should see: Error 11 CARD_INIT_ERROR - “CARD INITIALIZATION PROCESS FAILED”

Error 5: INVALID_DRIVER_STATE

Screen Message: **INVALID DRIVER STATE**

Condition: Driver is in an unexpected state, this condition should never occur

Error 6: ACCESS_UNATTAINABLE

Screen Message: **DRIVER CAN’T ACCESS OPTION CARD DPRAM**

Condition: Driver failed to get the lock on an area in DPRAM while trying to do a read or write.

Error 7: RELEASE_FAILURE

Screen Message: **DRIVER CAN’T RELEASE OPTION CARD DPRAM**

Condition: Driver failed to release the lock on an area in DPRAM while trying to do a read or write.

Error 8: MSG_TIMEOUT

Screen Message: **DRIVER TIMEOUT**

Condition: The Ethernet/IP option card failed to respond to one of the driver's mailbox init messages.

Error 9: MB_S_TIMEOUT

Screen Message: **TIMEOUT WAITING SEND MAILBOX ACCESS**

Condition: The driver timed out waiting to place a message into the card's mailbox

Error 10: MB_R_TIMEOUT

Screen Message: **TIMEOUT WAITING RECV MAILBOX ACCESS**

Condition: CURRENTLY, NEVER WILL OCCUR

Error 11: CARD_INIT_ERROR

Screen Message: **CARD INITIALIZATION PROCESS FAILED**

Condition: Occurs when the driver fails to start after power up, or the driver fails to start after a reset. Could be a result of errors 1-10

Error 12: CARD_RW_ERR

Screen Message: **CARD INIT FAILED OR DRIVER STOPPED**

Condition: Driver has attempted to Read or Write from the card after the card's init has failed, or the driver has been stopped.

Error 13: CARD_WD_ERR

Screen Message: **CARD IS DEAD**

Condition: Driver has attempted to Read the watchdog counter, and found it not updating, indicating a card failure.

Error 14: CARD_OL_ERR

Screen Message**: CARD NOT ONLINE**

Condition: Driver has attempted to Read or Write from the card, however, it found the card to be offline.

Error 15: CARD_CN_ERR

Screen Message: **CARD NOT CONNECTED**

Condition: Driver has attempted to Read or Write from the card, however, found the card was not connected.

Error 16: INVALID_TAG_ERR

Screen Message: **TAG NOT DEFINED IN MEMORY: T : r r r [/ BB]**

Condition: Occurs if the driver encounters a tag during a Read or Write, that does not exist in the user-defined IN or OUT area of the Ethernet/IP option card.

Error 17: TAG_READONLY_ERR

Screen Message: **TAG IS READ ONLY: T : r r r [/BB]**

Condition: Occurs when the driver encounters an OUTPUT tag during a Write and OUTPUT data can't be written to.

Error 18: DATA_ERR (NOT IMPLEMENTED)

Screen Message: **DATA ERR; NN-E:CCCCC,IIIII,AAA[,MMMMM]**

Condition: The option card responded to a mailbox message that the driver sent. The quantity of data in the reply is more than what was specified by the tag.

Error 19: CONFIG_IP_ERROR

Screen Message: **NO IP ADDRESS**

Condition: The attributes were configured with an IP address (0.0.0.0) or a subnet mask (255.255.255.255).

Error 20: EXP_MSG_TIMEOUT (NOT IMPLEMENTED)

Screen Message: **UCMM TIMEOUT: NN-E:CCCCC,IIIII,AAA[,MMMMM]**

Condition: The Ethernet/IP option card failed to respond to an explicit message.

Error 21: INVALID_MESSAGE _ID

Screen Message: **INVALID MESSAGE ID**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid message ID.

Error 22: INVALID_MESSAGE_TYPE

Screen Message: **Invalid message type**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid message type.

Error 23: INVALID_COMMAND

Screen Message: **Invalid command**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid command.

Error 24: INVALID_DATA_SIZE

Screen Message: **Invalid data size**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid data size in the data that the driver sent in its message.

Error 25: INVALID_FRAME_COUNT

Screen Message: **Invalid frame count**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid frame count.

Error 26: INVALID_FRAME_NUMBER

Screen Message: **Invalid frame number**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid frame number.

Error 27: INVALID_OFFSET

Screen Message: **Invalid offset**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid offset.

Error 28: INVALID_ADDRESS

Screen Message: **Invalid address**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid address.

Error 29: INVALID_RESPONSE

Screen Message: **Invalid response**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid response.

Error 30: FLASH_CONFIG_ERROR

Screen Message: **Flash configuration error**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that there is a flash configuration error.

Error 31: INCORR_IN_IO_LENGTH

Screen Message: **Incorrect IN I/O length**

Condition: The option card responded to an initialization mailbox message that the driver sent. The option card thinks that the length, as entered in the attributes of the Program Loader, of the INPUT is invalid.

Error 32: INCORR_IN_DPRAM_LENGTH

Screen Message: **Incorrect IN DPRAM length**

Condition: The option card responded to an initialization mailbox message that the driver sent. The option card thinks that the length of the INPUT DPRAM is invalid, this length is calculated from the length of the INPUT, as entered in the attributes of the Program Loader.

Error 33: INCORR_IN_TOTAL_LENGTH

Screen Message: **Incorrect IN total length**

Condition: The option card responded to a initialization mailbox message that the driver sent. The option card thinks that the length of the INPUT total length is invalid, this length is calculated from the length of the INPUT, as entered in the attributes of the Program Loader.

Error 34: INCORR_OUT_IO_LENGTH

Screen Message: **Incorrect OUT I/O length**

Condition: The option card responded to an initialization mailbox message that the driver sent. The option card thinks that the length, as entered in the attributes of the Program Loader, of the OUTPUT is invalid.

Error 35: INCORR_OUT_DPRAM_LENGTH

Screen Message: **Incorrect OUT DPRAM length**

Condition: The option card responded to a initialization mailbox message that the driver sent. The option card thinks that the length of the OUTPUT DPRAM is invalid, this length is calculated from the length of the OUTPUT, as entered in the attributes of the Program Loader.

Error 36: INCORR_OUT_TOTAL_LENGTH

Screen Message: **Incorrect OUT total length**

Condition: The option card responded to an initialization mailbox message that the driver sent. The option card thinks that the length of the OUTPUT total length is invalid, this length is calculated from the length of the OUTPUT, as entered in the attributes of the Program Loader.

Error 37: INCORR_CFG_MOD_STATUS_WD

Screen Message: **Incorrect config. module status word**

Condition: The option card responded to an initialization mailbox message that the driver sent. The option card thinks that the configuration of the bits in the module status word is incorrect.

Error 38: INCORR_CFG_INT_NOTIFY_WD

Screen Message: **Incorrect config. int. notification word**

Condition: The option card responded to an initialization mailbox message that the driver sent. The option card thinks that the configuration of the bits in the Interrupt Notification word is incorrect.

Error 39: INCORR_WDOG_CNTR_DIFF_VAL

Screen Message: **Incorrect watchdog cntr difference val**.

Condition: The option card responded to an initialization mailbox message that the driver sent. The option card thinks that there is an incorrect Watchdog Counter difference value.

Error 40: FLASH_FULL (NOT IMPLEMENTED)

Screen Message: **Flash full**

Condition: The option card responded to an initialization mailbox message that the driver sent. The option card had an error while storing the initialization configuration in FLASH.

Error 41: STORE_OPERATION_ERROR (NOT IMPLEMENTED)

Screen Message: **Store operation error**

Condition: The option card responded to an initialization mailbox message that the driver sent. The option card had an error while storing the initialization configuration in FLASH.

Error 42: BAD_CRC_OR_FLASH_EMPTY (NOT IMPLEMENTED)

Screen Message: **CRC mismatch or FLASH empty**

Condition: The option card responded to an initialization mailbox message that the driver sent. The option card had an error while retrieving the initialization configuration from FLASH.

Error 43: LOAD_FAILED (NOT IMPLEMENTED)

Screen Message: **Load failed**

Condition: The option card responded to an initialization mailbox message that the driver sent. The option card had an error while retrieving the initialization configuration from FLASH.

Error 44: INVALID_IP_ADDR_OR_SUBNET_MASK

Screen Message: **Invalid IP-address or Subnet mask**

Condition: The option card responded to an initialization mailbox message that the driver sent. The option card was unable to process the command.

Error 45: INVALID_SOCKET_TYPE

Screen Message: **Invalid socket type**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 46: NO_FREE_SOCKET

Screen Message: **No free socket**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 47: INVALID_SOCKET

Screen Message: **Invalid socket**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 48: NOT_CONNECTED

Screen Message: **Not connected**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 49: COMMAND_FAILED

Screen Message: **Command failed**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 50: ETHERNET_INVALID_DATA_SIZE

Screen Message: **Invalid data size**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 51: INVALID_FRAGMENT_TYPE

Screen Message: **Invalid fragment type**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 52: FRAGMENT_ERROR

Screen Message: **Fragment error**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 53: INVALID_TIMEOUT_TIME

Screen Message: **Invalid timeout time**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 54: CAN_NOT_SEND_MORE

Screen Message: **Can't send more**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 55: FILE_ACCESS_ERROR

Screen Message: **Failed to open file or file not found**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 56: INVALID_FILE_DESCRIPTOR

Screen Message: **Invalid file descriptor**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 57: INVALID_OPEN_METHOD

Screen Message: **Invalid open method**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 58: NO_EMAIL_SERVER_CONFIGURED

Screen Message: **No email server configured**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 59: COMMAND_ABORTED

Screen Message: **Command aborted**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 60: TOO_MANY_REGISTERED_OBJECTS

Screen Message: **Too many registered objects**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 61: OBJECT_ALREADY_REGISTERED

Screen Message: **Object already registered**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 62: DEREGISTERING_INVALID_OBJECT

Screen Message: **Deregistering invalid object**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 63: UNSUPPORTED_COMMAND

Screen Message: **Unsupported Command**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 64: FAILED_TO_SEND_UCMM_COMMAND

Screen Message: **Failed to send UCMM command**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 65: NO_TIMEOUT

Screen Message: **No timeout**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 66: INVALID_PORT_NUMBER

Screen Message: **Invalid port number**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 67: DUPLICATE_PORT_NUMBER

Screen Message: **Duplicate port number**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 68: EPATH_TOO_BIG

Screen Message: **EPATH too big**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 69: MAPPING_FAILED

Screen Message: **Mapping Failed**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 70: RST_NOTIFICATION_TYPE_UNSUPORTD

Screen Message: **Reset notification type unsupported**

Condition: The option card responded to a mailbox message that the driver sent. The option card was unable to process the command.

Error 71: AB_ FAULT

Screen Message: **Option card internal fault**

Condition: The option card has a fault. This error can occur for a connection timeout (flashing red LED) or a duplicate IP address (steady red LED) fault. Check the network status indicator to obtain more information.

Error 72: DUP_IP_OR_TIMEOUT

Screen Message: **Duplicate IP address/Connection timeout**

Condition: The option card has a network status error. This error can occur for a minor (flashing red LED) or a major (steady red LED) fault. Check the module status indicator to obtain more information. Determined that the IP address used to configure the module is already being used on the subnet.

Error 73: NO_ETHERNET_LINK

Screen Message: **Not connected to Ethernet network**

Condition: The option card is not connected to an Ethernet network or has lost its Ethernet network connection.

Error 74: CIP_ERROR (NOT IMPLEMENTED)

Screen Message: **CIP Err:XX NN-E:CCCCC,IIIII,AAA[,MMMMM]**

Condition: A device has replied with an error while attempting to process an explicit message.

GENERIC PROFIBUS-DP ERROR CODE DESCRIPTIONS

Driver Generated Errors

Error 0: NO_ERROR

Screen Message: **N/A**

Condition: NEVER WILL OCCUR

Error 1: NO_OPTION_BD

Screen Message: **NO OPTION CARD**

Condition: You will receive this error message if the Profibus-DP option card is not present.

Please Note: user should not see this message, instead they should see: Error 11 CARD_INIT_ERROR - “CARD INITIALIZATION PROCESS FAILED”

Error 2: INVALID_ATTRIBUTES

Screen Message: **INVALID ATRIBUTES FROM PROGRAM LOADER**

Condition: You will receive this error message if the driver did not get the expected list of attributes from the Program Loader

Error 3: NOT_INITIALIZED

Screen Message: **CARD INDICATES IT’S NOT INITIALIZED**

Condition: The Profibus-DP option card went through its initialization process, however it indicated that it is
not initialized.

Please Note: user should not see this message, instead they should see: Error 11 CARD_INIT_ERROR - “CARD INITIALIZATION PROCESS FAILED”

Error 4: DPRAM_FAILURE

Screen Message: **OPTION CARD DUAL PORT RAM FAILED**

Condition: On powerup the dual port RAM test failed.

Please Note: user should not see this message, instead they should see: Error 11 CARD_INIT_ERROR - “CARD INITIALIZATION PROCESS FAILED”

Error 5: INVALID_DRIVER_STATE

Screen Message: **INVALID DRIVER STATE**

Condition: Driver is in an unexpected state — this condition should never occur.

Error 6: ACCESS_UNATTAINABLE

Screen Message: **DRIVER CAN’T ACCESS OPTION CARD DPRAM**

Condition: Driver failed to get the lock on an area in DPRAM while trying to do a read or write.

Error 7: RELEASE_FAILURE

Screen Message: **DRIVER CAN'T RELEASE OPTION CARD DPRAM**

Condition: Driver failed to release the lock on an area in DPRAM while trying to do a read or write.

Error 8: MSG_TIMEOUT

Screen Message: **DRIVER TIMEOUT**

Condition: The Profibus-DP option card failed to respond to one of the driver's mailbox init messages.

Error 9: MB_S_TIMEOUT

Screen Message: **TIMEOUT WAITING SEND MAILBOX ACCESS**

Condition: The driver timed out waiting to place a message into the card's mailbox.

Error 10: MB_R_TIMEOUT

Screen Message: **TIMEOUT WAITING RECV MAILBOX ACCESS**

Condition: CURRENTLY, NEVER WILL OCCUR

Error 11: CARD_INIT_ERROR

Screen Message: **CARD INITIALIZATION PROCESS FAILED**

Condition: Occurs when the driver fails to start after power up, or the driver fails to start after a reset. Could be a result of errors 1-10

Error 12: CARD_RW_ERR

Screen Message: **CARD INIT FAILED OR DRIVER STOPPED**

Condition: Driver has attempted to Read or Write from the card after the card's init has failed, or the driver has been stopped.

Error 13: CARD_WD_ERR

Screen Message: **CARD IS DEAD**

Condition: Driver has attempted to Read the watchdog counter, and found it not updating, indicating a card failure.

Error 14: CARD_OL_ERR

Screen Message**: CARD NOT ONLINE**

Condition: Driver has attempted to Read or Write from the card, however, it found the card to be offline.

Error 15: CARD_CN_ERR

Screen Message: **CARD NOT CONNECTED**

Condition: Driver has attempted to Read or Write from the card, however, it found the card was not connected.

Error 16: INVALID_TAG_ERR

Screen Message: **TAG NOT DEFINED IN MEMORY: T r r r [/ BB]**

Condition: Occurs if the driver encounters a tag during a Read or Write, that does not exist in the user-defined IN or OUT area of the DeviceNet I/O option card

Error 17: TAG_READONLY_ERR

Screen Message: **TAG IS READ ONLY: T r r r [/BB]**

Condition: Occurs when the driver encounters an OUTPUT tag during a Write and OUTPUT data can't be written to.

Error 18: INVALID_MESSAGE _ID

Screen Message: **INVALID MESSAGE ID**

Condition" The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid message ID.

Error 19 INVALID_MESSAGE_TYPE

Screen Message: **INVALID MESSAGE TYPE**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid message type.

Error 20: INVALID_COMMAND

Screen Message: **INVALID COMMAND**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid command.

Error 21: INVALID_DATA_SIZE

Screen Message: **INVALID DATA SIZE**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid data size in the data that the driver sent in its message.

Error 22: INVALID_FRAME_COUNT

Screen Message: **INVALID FRAME COUNT**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid frame count.

Error 23: INVALID_FRAME_NUMBER

Screen Message: **INVALID FRAME NUMBER**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid frame number.

Error 24: INVALID_OFFSET

Screen Message: **INVALID OFFSET**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid offset.

Error 25: INVALID_ADDRESS

Screen Message: **INVALID ADDRESS**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid address.

Error 26: INVALID_RESPONSE

Screen Message: **INVALID RESPONSE**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that the message had an invalid response.

Error 27: FLASH_CONFIG_ERROR

Screen Message: **FLASH CONFIGURATION ERROR**

Condition: The option card responded to a mailbox message that the driver sent. The option card thinks that there is a flash configuration error.

Error 28: INCORR_IN_IO_LENGTH

Screen Message: **INCORRECT IN I/O LENGTH**

Condition: The option card responded to an Generic Init mailbox message that the driver sent. The option card thinks that the length, as entered in the attributes of the Program Loader, of the INPUT is invalid.

Error 29: INCORR_IN_DPRAM_LENGTH

Screen Message: **INCORRECT IN DPRAM LENGTH**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the length of the INPUT DPRAM is invalid, this length is calculated from the length of the INPUT, as entered in the attributes of the Program Loader.

Error 30: INCORR_IN_TOTAL_LENGTH

Screen Message: **INCORRECT IN TOTAL LENGTH**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the length of the INPUT total length is invalid, this length is calculated from the length of the INPUT, as entered in the attributes of the Program Loader.

Error 31: INCORR_OUT_IO_LENGTH

Screen Message: **INCORRECT OUT I/O LENGTH**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the length, as entered in the attributes of the Program Loader, of the OUTPUT is invalid.

Error 32: INCORR_OUT_DPRAM_LENGTH

Screen Message: **INCORRECT OUT DPRAM LENGTH**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the length of the OUTPUT DPRAM is invalid, this length is calculated from the length of the OUTPUT, as entered in the attributes of the Program Loader.

Error 33: INCORR_OUT_TOTAL_LENGTH

Screen Message: **INCORRECT OUT TOTAL LENGTH**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the length of the OUTPUT total length is invalid, this length is calculated from the length of the OUTPUT, as entered in the attributes of the Program Loader.

Error 34: INCORR_CFG_MOD_STATUS_WD

Screen Message: **INCORRECT CONFIG. MODULE STATUS WORD**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the configuration of the bits in the module status word is incorrect.

Error 35: INCORR_CFG_INT_NOTIFY_WD

Screen Message: **INCORRECT CONFIG. INT. NOTIFICATION WORD**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that the configuration of the bits in the Interrupt Notification word is incorrect.

Error 36: INCORR_WDOG_CNTR_DIFF_VAL

Screen Message: **INCORRECT WATCHDOG CNTR DIFFERENCE VAL.**

Condition: The option card responded to a Generic Init mailbox message that the driver sent. The option card thinks that there is an incorrect Watchdog Counter difference value.

Error 37: FB_ERROR

Screen Message: **FIELDBUS LED ERROR**

Condition: The Fieldbus Diagnostics LED #4 is ON. Observe the LED and time it. Consult the LED Indicator descriptions for the exact error.

SQUARE D PLC WITH SY MAX PROTOCOL

Error 0

Screen Message: **No message displayed.**

Condition: No error.

Error 1

Screen Message: **REMOTE DEVICE INACTIVE**

Condition: No reply received from the PLC. This error message will also be displayed for time outs. If replies are slow in returning from the PLC, increasing the timeout time may clear this error.

Error 2

Screen Message: **INVALID CHECKSUM RECEIVED**

Condition: The reply has a checksum error.

Error 3

Screen Message: **REMOTE DEVICE BUSY**

Condition: The command attempted cannot be carried out. The PLC is busy performing another task.

Error 4

Screen Message: **INVALID PLC ATTRIBUTES – USING DEFAULTS**

Condition: Invalid attributes received from the program loader.

Error 5

Screen Message: **INVALID ACKNOWLEDGE RECEIVED**

Condition: The driver received a negative acknowledge, an invalid character in the response, or an invalid ID.

Error 6

Screen Message: **INVALID REPLY**

Condition: The replay did not follow protocol.

Error 7

Screen Message: **INVALID DRIVER STATE**

Condition: An unknown condition has occurred.

Error 8

Screen Message: **PLC ERROR CODE: eee**

eee – Error code return by the PLC (1-255)

Condition: The command attempted failed; a corresponding error was returned in the reply.

Error 9

Screen Message: **UNKNOWN PLC ERROR CODE: eee**

eee – Error code return by the PLC (1-255)

Condition: The command attempted failed; an unexpected error was returned in the reply.

TEXAS INSTRUMENTS PLC WITH SERIES 5x5 PROTOCOL

0x0000 No error

0x0002 Limit of elements per screen exceeded

This occurs when there are too many registers on the display to monitor.

0x0004 Invalid checksum received

An invalid checksum was received in a message from the PLC.

0x0008 PLC Error - Check PLC Status

The PLC has sent an error code to the Panel stating there was a problem with the program in the PLC or with the setup of the Panel.

0x0010 Communications time-out

This error will appear if there is a loss of communications. This error is based on time-out time entered in the PLC attributes.

0x0020 Panel Register xxxx is read only

This error will occur if there is an attempt to write to a read-only variable within the PLC.

0x0040 Register xxxx Address out of range

This error will occur if an attempt to read or write to a variable within the PLC that is out of range of the PLC memory.

0x0080 Register xxxx Data not found

This will occur if the data requested cannot be found within the PLC. This is an error sent by the PLC.

0x0100 Invalid PLC attributes - using defaults

The driver received attributes that it could not use. The default values for all PLC attributes will be used.

EZ Series Touch Panel Error Messages

WRITE QUEUE OVERFLOW
This message indicates that the panel was unable to write all of the tags to the PLC. The panel can queue up to 20 tags to write to the PLC. After the tag is written to the PLC it is removed from the queue. If a write is attempted while the queue is full then this error message is displayed and the write is ignored.

EXTERNAL CLOCK - OBJECT IGNORED
This message indicates that the increment/decrement hour system object was pressed while the external clock has been selected in the project attributes. The object can not change the external clock.

RAM TEST FAILED
This message indicates that the RAM test performed at reset failed. The RAM in the unit may be unreliable.

VIDEO CHIP TEST FAILED
This message indicates that the video controller chip did not program correctly.

VIDEO RAM TEST FAILED
This message indicates that the video RAM test performed at reset failed. The video RAM in the unit may be unreliable.

KEYPAD ENTRY TOO HIGH
This message indicates that the user attempted to enter a value that was greater than the maximum value for the numeric keypad. The value is ignored.

KEYPAD ENTRY TOO LOW
This message indicates that the user attempted to enter a value that was less than the minimum value for the numeric keypad. The value is ignored.

TAG TYPE VALUE MISMATCH
This message indicates that the object contains a value that is of a different type than the object's tag. For example, the value may be a signed value but the tag may be an unsigned value. The object should be edited to contain the correct value type.

INVALID CODE
This message indicates that the user entered an invalid password for a protected object. The user must enter a valid password. The passwords are defined in the project attributes.

SCREEN BUFFER OVERFLOW
This message indicates that there are more objects on the screen than the panel can display. When a screen is displayed, the panel copies the objects to a buffer. If the buffer is filled then this message is displayed and any remaining objects are ignored. The amount of memory used by an object is dependent on the type of object, visibility, the label, and strings used by the object. Some objects should be removed from the screen.

EZ Series Touch Panel Error Messages

Error Codes

Error Codes are divided into categories and are numbered with prefixes and 3 digits as follows:

Value Range Errors	Vxx_x
PLC Conversion Errors	Pxx_x
Tag Errors	Txx_x
Project **I**nformation (Step 1) Errors	Ixx_x
Saving Errors	Sxx_x
Obj**e**ct Errors	Jxx_x
Communication Errors	Cxx_x
Miscellaneous Errors	Mxx_x

Value Range Errors (Vxx_x)

Value Errors common to all objects:
Error V01_1: Minimum value is not within range.
Error V01_2: Maximum value is not within range.
Error V01_3: Minimum value is greater than maximum value.
Error V01_4: Maximum value is less than minimum value.

Value Errors related to Meter object:
Error V02_1: LowLow limit is not within range.
Error V02_2: Low limit is not within range.
Error V02_3: High limit is not within range.
Error V02_4: HighHigh limit is not within range.

Value Errors related to Numeric Entry/Numeric Display.
Error V03_1: PLC Value 1 is not within range.
Error V03_2: PLC Value 2 is not within range.
Error V03_3: Display Value 1 is not within range.
Error V03_4: Display Value 2 is not within range.

Value Error related to Bar Graph:
Error V04_1: Mid value is not within range.

Value Errors related to PID Faceplate:
Error V05_1: Process value (Minimum) is not within range.
Error V05_2: Process value (Maximum) is not within range.
Error V05_3: Output value (Minimum) is not within range.
Error V05_4: Output value (Maximum) is not within range.

Value Error related to Recipe object:
Error V06_1: Value is not within range.

Reason: These errors occur when a value is not within selected tag's data range.
Solution: Enter a value that is within the appropriate range.

Valid ranges for various tag data types are:

TAG DATA TYPE	MINIMUM	MAXIMUM
Signed 16 bit	-32768	32767
Signed 32 bit	-2147483648	2147483647
Unsigned 16 bit	0	65535
Unsigned 32 bit	0	4294967295
BCD 16 bit	0	9999
BCD 32 bit	0	99999999
Floating point	-9999999999	9999999999

PLC Conversion Errors (Pxx_x)

Error P01_1: The selected panel type does not support the PLC chosen for the project. Do you want to continue?

Reason: Some panels support all of the available PLC drivers and some support only DirectLOGIC drivers.
Solution: Select an appropriate panel.

Error P02_1: <PLCFrom> is not compatible with <PLCTo>. If you continue, the PLC address from each tag will be lost and all the tags will become internal tags. Do you want to continue?
Error P02_2: Change in selected PLC would result in possible loss of tag data. Do you want to continue?
Error P02_3: Unable to convert to <PLCTo>.
Error P02_4: Unable to convert PLC Address.

Reason: This error occurs if, after creating a project with addressed tags, an attempt is made to change to a PLC with a different address format.
Solution: When changing PLCs, check the addressing in the PLC manuals to see if they are compatible. If they are not compatible, then the tag database is no longer valid and the addresses will have to be reentered.

Error P02_5: Unable to build PLC details structure while converting to < >.

Reason: If you try to change PLCs in a previously created project and select "Cancel" in the first message window, a second window will appear.
Solution: This message window appears to inform the user that no tag addresses were changed.

Tag Related Errors (Txx_x)

Error T01_1: Define a valid tag for <control name>.

Reason: This error occurs when you have not defined all tags in an object requiring multiple tags.
Solution: Define all the required tags for the selected object.

Error T01_2: Tag name already exists.

Reason: The tag name that was entered is a name that already has a data type and/or PLC address assigned to it in the tag database.
Solution: Change the tag name entered to a name that is unique when compared to all the other tags in the Tag Database.

Error T01_3: Tag category does not match.

Reason: This error occurs when a Tag Name of an incorrect data type is typed into the Tag Name field of an object.
Solution: Select a valid Tag Name from the pulldown list, or create a new valid Tag Name.

Error T02_1: Invalid Unit Number.
Error T02_2: Invalid Address Type.
Error T02_3: Invalid Address.
Error T02_4: Invalid Bit Number.
Error T02_5: Address in not Word Aligned (Even address is required).
Error T02_6: Address is not Word Aligned (Odd address is required).

Reason: Address entered for the tag is not correct.
Solution: Specify a valid PLC address.

Error T02_7: Address type does not match Tag data type, or the address is invalid.
Error T02_8: Tag IO Type does not match Object type.

Reason: If you specify a discrete address to an object requiring a word address or vice versa, you will receive this error message.
Solution: Specify a valid PLC address, with appropriate I/O Type.

Error T02_9: This object requires a Read/Write PLC address. Entered address is Read Only location.

Reason: This error occurs if a Read Only PLC address was entered for a Touch Object.
Solution: Enter a Read/Write location for touch objects.

Object Type	Type of Address
Touch Objects	Read/Write
Display Objects	Read/Write or Read Only
Alarms	Read/Write or Read Only
Project Attributes (Internal Clock)	Read/Write
Project Attributes (External Clock)	Read/Write or Read Only
Project Attributes (Passwords)	Read/Write or Read Only
Project Attributes (Panel to PLC)	Read/Write
Project Attributes (PLC to Panel)	Read/Write or Read Only

Error T02_10: Number of Characters must be even and valid range is from 2 to 40.

Reason: In the process of making an ASCII tag, the number of characters must remain between 2 and 40. If the user enters a number outside of this range, this error occurs.
Solution: The user can either reenter a number within the specified range or use the wheel to the right edge of that field.

Error T02_11: IO Type is not valid for <ControlName>. Unable to convert.

Reason: If you specify a discrete address to an object requiring a word address or vice versa, you will receive this error message.
Solution: Specify a valid PLC address.

Error T03_1: Unable to get the data type.

Reason: The Tag Database has become corrupted.
Solution: Try the following:

1) Go to Tag Database (Setup > Tag Database) and select a tag not associated with any objects.
2) Delete the tag by pressing Delete button or by using delete key on keyboard.
3) Save the project.
4) Close and then restart EZ Series Touch Panel Editor Programming Software.
5) Open the project and check for the error again.

Error T03_2: Tag index not found. Creating internal tags .

Solution: Try the following:

1) Accept defaults
2) Open Tag Database and check to see if all tags are there.
3) Some Tags will be UNKNOWN, modify to your requirements.

Error T03_3: Unable to open tag database file (*.map).

Reason: This error occurs if the project map file gets deleted or is missing when an attempt to load the program is made.
Solution: Recovering or finding original map file will recover project; if this cannot be done, creating a new project with a new map file is the only solution.

Error T03_4: Tag index limit reached; unable to create a new tag.

Reason: You've reached the tag maximum. Maximum number of tags that can be entered is 32,000.

Error T03_5: Incorrect number of PLC tags and Internal tags.

Reason: Tag database is corrupted.
Solution: Rebuild the project.

Error T03_6: Tag expected but not found. Creating it as an internal tag.

Solution: Try the following:

1) Accept defaults
2) Open Tag Database and check to see if all tags are there.
3) Some Tags will be UNKNOWN, modify to your requirements.

Error T04_1: Cannot delete <Tag>. Tag associated with an object.

Reason: The selected tag is associated with an object/alarm/project attribute.
Solution: Use **Setup> Tag Cross Reference** to see what objects/alarms/project attributes are linked to the tag.

Error T04_2: No map data found in tag database file named.

Reason: Tag database is corrupted.
Solution: Rebuild the project.

Project Information Dialog box (STEP 1) Errors (Ixx_x)

Error I01_1: Attributes file associated with this project not found; creating one with default attributes.

Reason: There are six different files that make up the project. If the saved attributes file (.atr) is moved, deleted, or is altered outside of panel, the file may not load or will not be found.
Solution: The program loader will reset the attributes to default. Go to Setup > Select PLC and redefine the communication parameters required.

Error I02_1: Invalid file name or path

Reason: You have specified an invalid file name.
Solution: You have to specify a valid file name.
Do not include any special characters (\, /,.,*,?,<,>,|,etc.) while naming your files. First character should be alphanumeric.

Error I02_2: Invalid file name. Do not use symbols.

Reason: You have specified an invalid file name.
Solution: To avoid getting both these messages, when creating a project do not use character symbols (/,{,},[,],<,>,…etc.) in the project name. Only use letters A-Z and/or numbers 0-9 for a unique project name.

Error I02_3: Invalid Think and Do map file.

Reason: When working with Think and Do PLC type, this program will map the EZ Series Touch Panel project to an existing Think and Do map file. If you try to map the EZ Series Touch Panel project to a map file generated by any program other than Think and Do, this message will appear and prevent you from continuing with the project.
Solution: Select a valid Think and Do map file.

Error I03_1: Unable to find the Dll Path. Unable to build the Tag Database

Solution: If you have moved the Dlls to some other directory move them back. If you have deleted them, you must reinstall the software.

Error I03_2: Cannot edit Online unless the panel has a program. Edit Offline first and write a program to the panel.

Reason: Having no project loaded into the touch panel, the program loader will not allow one to go into On-Line Edit mode, or if the map file has been altered, and this message will come up.
Solution: Get into Off-Line Edit mode and upload a project, exit out to the “Step: Project Information”, click on the On-Line edit mode, and select “OK”. If that doesn’t work, make new project with new map file.

Error I03_3: Screen Number must be in the 1..999 range.

Reason: You have entered an invalid Screen number
Solution: Enter a valid Screen number.

Saving Errors (Sxx_x)

Error S01_1: The EZ Series Touch Panel Editor has detected that one or more static objects (line, arc, circle, pie, static bitmap and static text) are on top of dynamic objects. Static objects cannot be on top of dynamic objects. These static objects will be placed below the dynamic objects.

Reason: If you have any static and dynamic objects on the same screen, you need to make sure the dynamic objects are always on top or away from the static objects. Panel refreshes only the dynamic objects once all the objects are drawn. If for any reason a static object gets on top of a dynamic (or brought to front with the right-click menu option with dynamic object on top), this message will appear.

Solution:

1) The Editor will take care of this automatically. It will sequence the objects in such a way that static objects are drawn below the dynamic objects.
2.) Other option is you can select the objects, right-click on the mouse and select Bring Forward / Send Backward to rearrange them manually.

Error S01_2: EZ Series Touch Panel Editor detected that one or more objects on screen number x are outside the 320x240 resolution. Please move objects on this and all other screens within 320x240 limits BEFORE changing the panel. You may use "Show 320x240 Rectangle" icon to show a 320x240 rectangle. Please ensure on all screens that the objects are within this rectangle before trying to change to a lower resolution panel.

Solution: Move the objects to within the 320x240 rectangle on all screens.

Error S01_3: Unable to save this screen. Screen size exceeds the maximum: 128K. Please delete a few objects and try to save again.

Solution: Either delete a few of the objects or move the objects to a different screen.

Error S02_1: Unable to save the project to the panel.

Reason: When working ONLINE, the panel loses power or the communication link between the panel and PC is interrupted or disconnected. When you select Save Screen or Save Project, you will receive this error message.

Solution: Check to see if power is getting to the panel, then check the COM line between the panel and PC for a good connection.

Object Errors (Jxx_x)

Radio Buttons

Error J01_1: Object cannot be accommodated in the new position.

Reason: The radio buttons object cannot have any buttons over hanging on the screen. The vertical and horizontal radio buttons will only allow enough buttons to go from one end of the screen to the other end. Any more buttons will generate this message.

Solution: One of two courses of action may be taken. The first is to reduce the size of the object itself. The second option is to reduce the number of buttons in the object.

Error J01_2: Cannot add another button. To do so would exceed the panel size.

Reason: The radio button object will not allow more buttons when the object is the same height/width as the touch panel screen.

Step Switch

Error J02_1: Number of steps: Range is from 2 to 4.

Solution: Enter a number between 2 and 4 or use the wheel next to the box.

Error J02_2: Step Switch x Tag is not Defined. (x being the step number)

Reason: The "Tag Name", in the "Step #1" tab, was empty when the "OK" button was selected.
Solution: Click on a tag from the drop-down menu for the "Tag Name" box, or type in a valid tag name in the "Tag Name" box, in the tab "Step #1".

Thumbwheel

Error J03_1: Number of Wheels: Range is from 1 to 5.

Solution: Only enter a number between 1 and 5 into the "Number of Wheels" field, or use the wheel to the right side of the entry field. UNSIGNED DECIMAL format: 5 digits (wheels), HEX: 4 digits (wheels)

Recipe

Error J04_1: At least one valid recipe tag should be defined.

Reason: When creating a recipe button, if there are no tags entered under the "Recipe" tab, this message will appear.
Solution: Click on the "Recipe" tab and enter a tag in the first box.

Numeric Entry/Numeric Display

Error J05_1: PLC Value 1 is greater than PLC Value 2.

Solution: Enter a value for PLC Value 1 that is less than PLC Value 2.

Error J05_2: Display Value 1 is greater than Display Value 2.

Solution: Enter a value for Display Value 1 that is less than Display Value 2.

Meter

Error J06_1: LowLow limit should be greater than Minimum value.

Error J06_2: Low limit should be greater than LowLow limit.

Error J06_3: LowLow limit is greater than High limit.

Error J06_4: High limit is greater than HighHigh limit.

Error J06_5: HighHigh limit is greater than Maximum value.

Reason: You will get above errors when the following rule is not met.
Minimum Value < Low Low Limit < Low Limit < High Limit < High High Limit < Maximum Value
Solution: Change the values appropriately.
Note: while changing the values of alarm limits, use the following rule of thumb:

- ***If you are changing the values towards higher values, start from HighHigh limit and go backwards.***
- ***If you are changing the values towards lower values, start from LowLow limit and go upwards.***

Bar Graph

Error J07_1: Mid value is not in between Minimum and Maximum values.

Reason: You will get above errors when the limits (for alarm) are not within selected tag's data range.
Solution: You need to modify the values so that the values are within appropriate range.

PID Faceplate

Error J08_1: Process Variable Tag and Set Point Tag must be of same Data Type.

Solution: Ensure that the Process Variable tag and the Set Point Tag are of the same data type. In

other words, if you define a signed tag for Process Variable, define a signed tag for Set Point tag, also. Always assign the same data tag type to both the Process Variable and Set Point.

Error J08_2: Process value (Maximum) is less than Present value (Minimum).

Solution: Ensure that Present value (Maximum) is greater than Present value (Minimum).

Error J08_3: Output value (Minimum) cannot be greater than Present value (Maximum).

Solution: Ensure that Output value (Maximum) is greater than Output value (Minimum).

Line Graph

Error J10_1: At least one valid Pen tag must be defined.

Reason: When using a line graph, there must be a minimum of one tag (signed, unsigned, or BCD) assigned to the Pen entries.
Solution: Be sure to assign a minimum of one tag (signed, unsigned, or BCD) to the Pen.

Error J10_2: All Pen tags must be of the same sign type.

Reason: The program loader requires that all the Pen tags have the same sign type for each line graph object. If you assign tags with different sign types (signed 16/32 and unsigned 16/32, or BCD 16/32 and signed 16/32) to the same line graph object, this message will appear.
Solution: If you need a line graph that contains a signed tag and an unsigned tag, they will then require multiple line graph objects (one for each individual sign type).

Error J10_3: Pen tags and Range type must be of same sign type.

Reason: When assigning tags to the Pen page, they all must be of the same tag type, and that also has to agree with the Range type under the XY Axis tab. If one is different from the other and the "OK" button is selected, this message will appear.
Solution: After assigning the Pen tags, (same sign type) go to the XY Axis tab and select the appropriate range type corresponding to the assigned Pen tags (or select the range type before assigning any tags to the Pen). Either way, the Pen tags and the Range type must be the same before the "OK" button is selected.

Error J10_4: Total number of line graphs must be between 0 and 255.

Reason: You will not be able to create more than 255 line graphs in a single screen.

Dynamic Bitmap/Static Bitmap

Error J11_1: Selected file is not a BMP file.

Solution: Select a valid Windows BMP file.

Error J11_2: No Bitmap file was selected. Please select a BMP File.

Solution: One of three actions can be taken:

1) Select "Copy from Clipboard" to copy the file name chosen from the Symbol Factory.
2) Select "Import Bitmap…" to choose a bitmap from a file somewhere in your computer or off the network to enter in the "File Name" box.

Error J11_3: Select either ON or OFF bitmap.

Reason: Dynamic bitmaps require at least one bitmap to be selected.

Error J11_4: Compressed BMP size exceeds the maximum size usable BMP size

Reason: Panels use a Run Length Encoding (RLE) technique to compress Bitmaps for display and saving purposes. The maximum allowable size of a compressed BMP is 64K. If the selected BMP

results more than 64K during compression, this error occurs. Even if the bitmap size is less than the panel's resolution, you may get this error.
Solution: You need to select a different BMP. If you would like to use the same bitmap, you need to reduce the complexity of the bitmap. Although, there is no straight forward way to tell that a bitmap would result in less than 64K during compression, the following tips might be useful:

1) Try to have the same color across the bitmap. If you mix lot of color patches, that may increase the compressed bitmap size.
2) Try to reduce the font usage in the bitmap.

Error J11_5: Selected BMP files combined must not exceed 64K size. Please select a different BMP file.

Reason: There are two BMP files for dynamic bitmap. Both BMP files would be compressed using RLE technique and combined length of compressed BMPs together should not exceed 64K in size. If it exceeds, you would get this error.
Solution: Select BMPs which do not exceed the 64K size limit.

Error J11_6: Height and Width out of range. BMP's height must be less than (h). BMP's width must be less than (w).

Reason: 10" and 8" panels support bitmaps no larger than 640 x 480 pixels. Similarly, 6" panels support a maximum bitmap size of 320x240 pixels. This error indicates that a bitmap exceeds the maximum size.
Solution: Select a bitmap that fits within the above ranges.

Error J11_7: Compressed BMP size exceeds the maximum usable BMP size; unable to save ON bitmap.

Error J11_8: Compressed BMP size exceeds the maximum usable BMP size; unable to save OFF bitmap.

Error J11_9: Compressed BMP size exceeds the maximum usable BMP size; unable to save Static Bitmap.

Reason: Panels use a Run Length Encoding (RLE) technique to compress Bitmaps for display and saving purposes. The maximum allowable size of a compressed BMP is 64K. If the selected BMP results more than 64K during compression, this error occurs. Even if the bitmap size is less than the panel's resolution, you may get this error.
Solution: You need to select a different BMP. If you would like to use the same bitmap, you need to reduce the complexity of the bitmap. Although, there is no straight forward way to tell that a bitmap would result in less than 64K during compression, the following tips might be useful:

1) Try to have the same color across the bitmap. If you mix lot of color patches, that may increase the compressed bitmap size.
2) Try to reduce the font usage in the bitmap.

Error J11_10: Error in extracting Bitmap for ON button.

Solution: Delete the bitmap object and recreate the object again. If you still receive this error messages, close and then reopen the application and try again.

Error J11_11: Decompression was not successful.

Reason: The Project file has become corrupted.
Solution: If you get this error, you will have to recreate this project.

Error J11_12: Select Palette failed in Paint DOB.

Reason: Resource not available in the system to draw the bitmap.
Solution: Close other applications and try to insert the bitmap. If it still does not work, restart the

system.

Miscellaneous

Error J12_1: This field cannot be empty.

Solution: Your cursor will be located in the data entry field that requires data entry. Enter an appropriate value.

Communication Errors (Cxx_x)

Port Related Errors

Error C01_1: Unable to open communication port.

Solution: Select another COM port.

Error C01_2: Communications port not found.

Reason: No valid communication port is found on the computer.
Solution: At least one valid serial communication port should be available for communication between the panel and PC.

Error C01_3: Communications port is being used by some other application. Access denied.

Solution: Close the other application and try to communicate from panel or, if you have an extra serial port, connect the cable to that port and select that extra port for communication from panel.

Write to Panel Related Errors

Error C02_1: Selected panel does not match connected panel. Write to panel is aborted.

Reason: When writing to the panel, if the panel type selected on the screen "Step 1: Project Information" does not match the panel that the computer and PLC are physically connected to, the program loader will not upload project.
Solution: Exit the OFF-LINE Editor to the "Step 1: Project Information" screen, and select the appropriate panel type for the connected panel.

Error C02_2: Unable to update PLC driver.

Reason: You will receive this error message if communication is not working between the programming software and the panel, or if the panel is still trying to communicate with the old driver and you are attempting to update the driver.
Solution: Restart the panel and try communicating with the panel. If you still face this problem, clear memory from panel (using Panel > Clear Memory) and update the PLC driver and then, save your project. Ensure that you have the project saved to disk before you do clear memory.

Error C02_3: PLC Attributes could not be written to the Panel.
Error C02_4: Tags could not be written to the Panel.
Error C02_5: Error in sending Project attributes to panel.
Error C02_6: Error in sending screens to panel.
Error C02_7: Error in sending alarm database to panel.
Error C02_8: Error in sending message database to panel.

Solution: Check the connections between the panel and computer. Restart the panel and try communicating again.

Error C02_9: Objects are overlapping; project cannot be written to the panel.

Reason: Objects are overlapping in one or more screens; you will not be able to save / write to the panel.

Solution: If you get this error, you will see an object highlighted in the screen. The highlighted object is overlapping another object. Please move the object so that it does not overlap another object ,and send the project again.

Error C02_10: Uploading could not be completed.

Solution: Check the connections between the panel and computer. Restart the panel or resave the project and try communicating again.

Error C02_11: Out of Memory Error.

Reason: Flash card is smaller than user RAM size.
Solution: Please contact your panel vendor.

ONLINE Programming Communication Errors

Error C03_1: Unable to delete screen from panel.

Reason: If Screen > Delete Screen (on main menu bar) is selected while there is a disruption in the communication between the panel and computer, this error message is produced.
Solution: Check the COM line, power to panel, and COM port used for correct setting and function.

Error C03_2: Memory diagnosing failed.

Solution: Check connections and COM port settings. Ensure the proper function and power distribution of panel (no system faults). If all checks out OK and you are still receiving this error message, there maybe a physical problem with the panel's memory.

Error C03_3: Errors in Warm Boot.

Reason: Panel is not warm booting.
Solution: This could be due to panel not active/communication is not there between PC to panel. Please check the connection between panel to PC. If the problem persists, restart the panel.

Error C03_4: Unable to program User Flash.
Error C03_5: Errors in Reading Flash card.

Reason: If the flash card is not set properly / communication is not happening between the panel and editor, you would get this error.
Solution: Check whether the flash card is fit properly in the slot / restart the panel / check the cable for communication.

Error C03_6: Unable to read PLC Attributes from Panel.
Error C03_7: Unable to delete screen <screen number> from the panel.
Error C03_8: Unable to get Information from Panel. Please check the connection between panel and computer.
Error C03_9: Unable to read System Attributes from panel.
Error C03_10: Unable to read tags from the panel.

Solution: Check the connection between panel and computer. Restart the panel and try communicating again.

Error C03_11: Testing RAM - failed

Solution: If you have a RAM Card installed in the panel, remove this RAM card and redo the test. If the test passes, replace the RAM card with a new RAM card. It the test fails, there is a problem with the panel. Please contact technical support.

Error C03_12: Testing Flash - failed

Solution: Replace the Flash card.

Miscellaneous Errors (Mxx_x)

Error M01_1: Error in memory allocation.

Reason: You will get this error if EZ Series Touch Panel Editor is not able to allocate certain amount of memory for doing some operations.

Solution: close other applications and try. If you still get this error, save the project and close the application. Restart your computer and try again.

Error M02_2: Unable to open the Project file (*.ezt).
Error M02_3: Unable to open message database file (*.msd).
Error M02_4: Unable to open alarm database file (*.alr).
Error M02_5: Unable to open PLC attributes file (*.atr).
Error M02_6: Unable to open annotations file (*.ano).
Error M02_7: Unable to open project options file (*.opt).

Solution: You have renamed your project accidentally while project was open in EZ Series. Close this project and open it again.

Error M03_1: Unable to create project file (*.ezt).
Error M03_2: Unable to create PLC attributes file (*.atr).
Error M03_3: Unable to create message database file (*.msd).
Error M03_4: Unable to create alarm database file (*.alr).
Error M03_5: Unable to create annotation file (*.ano).
Error M03_6: Unable to create project options file (*.opt).
Error M03_7: Unable to save PLC Attributes file (*.atr).
Error M04_1: Unable to create temporary project file (*.ezt).
Error M04_2: Unable to create temporary annotations file (*.ano).
Error M04_3: Unable to create temporary PLC attributes file (*.atr).

Reason: You might receive these error messages if you are running two instances of the EZ Series Touch Panel Editor Programming Software, opened a project in one and then gave the same project name in another to be downloaded from panel.

Solution: Give a valid project file name that is not open in any application. If you still face the problem, close all your applications and run only one instance of EZ Series Touch Panel and try again.

Error M05_1: Unable to unload.
Error M05_2: Unable to load.

Reason: There is a .dll file in the directory that doesn't belong. The program loader will report this error.

Solution: Remove the specified file, and reinstall the software.

Error M06_1: Not a panel.

Solution: Connect a panel to the computer and try to communicate with the panel.

Error M06_2: File corrupted; number of bytes in the screen is zero.

Error M06_3: Unable to rename the selected screen.

Error M06_4: Problems in project checksum

Error M06_5: Invalid screen checksum

Solution: You need to recreate the project. If this problem persists, please report it to technical support.

Error M06_6: There are no PLC dlls available in this execution directory.

Reason: If you have moved all the PLC dlls from the directory where EZ Series Touch Panel.exe resides, you will receive this error message.

Solution: Reinstall the software

Error M06_7: PLC Dll file being used by this project is not found.

Reason: A PLC .dll file has been moved or deleted from the program directory.

Solution: Reinstall the software.

Error M06_8: Received checksum is not equal to calculated checksum.

Solution: Reinstall software and try again.

Error M06_9: No PLC has been selected.

Solution: Reinstall software and try again.

Error M07_1: Invalid Screen Name.

Error M07_2: Invalid screen ID , screen ID range is 1..999.

Reason: Valid screen name's length is 1 to 40 characters.

Solution: You have to specify a valid screen name. Do not include any special characters (\, /,..,*,?,<,>,|,etc.) while naming your files. First character should be alphanumeric.

Error M08_1: Downloaded project is a protected project. This cannot be edited/viewed in the editor."

Reason: Project is write protected.

Solution: You will not be able to open this project for viewing / editing purpose. Contact the people from whom you got this project.

Error M09_1: System out of memory to run Symbol Factory."

Solution: Restart your system

Error M09_2: Invalid Symbol Factory.exe file."

Solution: Reinstall the software

Error M09_3: Unable to find Symbol Factory application."

Solution: If you have moved symbols directory to some other place, please copy it back. Otherwise, reinstall the software.

B

ASCII and ANSI Characters

In this Appendix....

— ASCII Character List
— ANSI Character List

EZ Series Touch Panel ASCII Characters

Name	Octal	Dec	Hex	Description
SP	040	32	20	Space
!	041	33	21	Exclamation point
“	042	34	22	Double quote
#	043	35	23	Pound sign
$	044	36	24	Dollar sign
%	045	37	25	Percent sign
&	046	38	26	Ampersand
‘	047	39	27	Apostrophe (single quote)
(	050	40	28	Left parenthesis
)	051	41	29	Right parenthesis
*	052	42	2A	Asterisk
+	053	43	2B	Plus
,	054	44	2C	Comma
-	055	45	2D	Hyphen (minus)
.	056	46	2E	Period (decimal point)/dot
/	057	47	2F	Slant (slash)
0	060	48	30	Zero
1	061	49	31	One
2	062	50	32	Two
3	063	51	33	Three
4	064	52	34	Four
5	065	53	35	Five
6	066	54	36	Six
7	067	55	37	Seven
8	070	56	38	Eight
9	071	57	39	Nine
:	072	58	3A	Colon
;	073	59	3B	Semicolon
<	074	60	3C	Less than / Left angle bracket
=	075	61	3D	Equals sign
>	076	62	3E	Greater than / Right angle bracket
?	077	63	3F	Question mark
@	0100	64	40	“At” sign
A	0101	65	41	Uppercase A
B	0102	66	42	Uppercase B
C	0103	67	43	Uppercase C

Name	Octal	Dec	Hex	Description
D	0104	68	44	Uppercase D
E	0105	69	45	Uppercase E
F	0106	70	46	Uppercase F
G	0107	71	47	Uppercase G
H	0110	72	48	Uppercase H
I	0111	73	49	Uppercase I
J	0112	74	4A	Uppercase J
K	0113	75	4B	Uppercase K
L	0114	76	4C	Uppercase L
M	0115	77	4D	Uppercase M
N	0116	78	4E	Uppercase N
O	0117	79	4F	Uppercase O
P	0120	80	50	Uppercase P
Q	0121	81	51	Uppercase Q
R	0122	82	52	Uppercase R
S	0123	83	53	Uppercase S
T	0124	84	54	Uppercase T
U	0125	85	55	Uppercase U
V	0126	86	56	Uppercase V
W	0127	87	57	Uppercase W
X	0130	88	58	Uppercase X
Y	0131	89	59	Uppercase Y
Z	0132	90	5A	Uppercase Z
[	0133	91	5B	Left square bracket
\	0134	92	5C	Back slash
]	0135	93	5D	Right square bracket
^	0136	94	5E	Caret
_	0137	95	5F	Underscore
‘	0140	96	60	Back quote
a	0141	97	61	Lowercase a
b	0142	98	62	Lowercase b
c	0143	99	63	Lowercase c
d	0144	100	64	Lowercase d
e	0145	101	65	Lowercase e
f	0146	102	66	Lowercase f
g	0147	103	67	Lowercase g
h	0150	104	68	Lowercase h

Name	Octal	Dec	Hex	Description
i	0151	105	69	Lowercase i
j	0152	106	6A	Lowercase j
k	0153	107	6B	Lowercase k
l	0154	108	6C	Lowercase l
m	0155	109	6D	Lowercase m
n	0156	110	6E	Lowercase n
o	0157	111	6F	Lowercase o
p	0160	112	70	Lowercase p
q	0161	113	71	Lowercase q
r	0162	114	72	Lowercase r
s	0163	115	73	Lowercase s
t	0164	116	74	Lowercase t
u	0165	117	75	Lowercase u
v	0166	118	76	Lowercase v
w	0167	119	77	Lowercase w
x	0170	120	78	Lowercase x
y	0171	121	79	Lowercase y
z	0172	122	7A	Lowercase z
{	0173	123	7B	Left curly brace
|	0174	124	7C	Vertical bar
}	0175	125	7D	Right curly brace
~	0176	126	7E	Tilde

EZ Series Touch Panel ANSI Characters

ANSI Character Codes can be entered into text objects on the panel by pressing and holding the ALT button and then typing in 0 and the 3-digit code for the character on the numeric keypad on your computer keyboard.

EXAMPLE: To enter the ¿ character:

1. Press and hold the ALT key on your computer keyboard
2. Enter 0191 on the Numeric Keyboard on your computer keyboard.
3. The ¿ character will appear as a text character.

Character	Code	Description
¿	191	Inverted Question Mark
À	192	Latin Capital Letter A with Grave
Á	193	Latin Capital Letter A with Acute
Â	194	Latin Capital Letter A with Circumflex
Ã	195	Latin Capital Letter A with Tilde
Ä	196	Latin Capital Letter A with Diaeresis*
Å	197	Latin Capital Letter A with Ring Above
Æ	198	Latin Capital Letter Ae
Ç	199	Latin Capital Letter C with Cedilla
È	200	Latin Capital Letter E with Grave
É	201	Latin Capital Letter E with Acute
Ê	202	Latin Capital Letter E with Circumflex
Ë	203	Latin Capital Letter E with Diaeresis
Ì	204	Latin Capital Letter I with Grave
Í	205	Latin Capital Letter I with Acute
Î	206	Latin Capital Letter I with Circumflex
Ï	207	Latin Capital Letter I with Diaeresis
Ð	208	Latin Capital Letter Eth
Ñ	209	Latin Capital Letter N with Tilde
Ò	210	Latin Capital Letter O with Grave
Ó	211	Latin Capital Letter O with Acute
Ô	212	Latin Capital Letter O with Circumflex
Õ	213	Latin Capital Letter O with Tilde
Ö	214	Latin Capital Letter O with Diaeresis
×	215	Multiplication Sign
Ø	216	Latin Capital Letter O with Stroke
Ù	217	Latin Capital Letter U with Grave

* Diaeresis is also called an Umlaut

— continued, next page

Character	Code	Description
Ú	218	Latin Capital Letter U with Acute
Û	219	Latin Capital Letter U with Circumflex
Ü	220	Latin Capital Letter U with Diaeresis
Ý	221	Latin Capital Letter Y with Acute
Þ	222	Latin Capital Thorn
ß	223	Latin Small Letter Sharp S
à	224	Latin Small Letter A with Grave
á	225	Latin Small Letter A with Acute
â	226	Latin Small Letter A with Circumflex
ã	227	Latin Small Letter A with Tilde
ä	228	Latin Small Letter A with Diaeresis
å	229	Latin Small Letter A with Ring Above
æ	230	Latin Small Letter Ae
ç	231	Latin Small Letter C with Cedilla
è	232	Latin Small Letter E with Grave
é	233	Latin Small Letter E with Acute
ê	234	Latin Small Letter E with Circumflex
ë	235	Latin Small Letter E with Diaeresis
ì	236	Latin Small Letter I with Grave
í	237	Latin Small Letter I with Acute
î	238	Latin Small Letter I with Circumflex
ï	239	Latin Small Letter I with Diaeresis
ð	240	Latin Small Letter Eth
ñ	241	Latin Small Letter N with Tilde
ò	242	Latin Small Letter O with Grave
ó	243	Latin Small Letter O with Acute
ô	244	Latin Small Letter O with Circumflex
õ	245	Latin Small Letter O with Tilde
ö	246	Latin Small Letter O with Diaeresis
÷	247	Division Sign
ø	248	Latin Small Letter O with Stroke
ù	249	Latin Small Letter U with Grave
ú	250	Latin Small Letter U with Acute
û	251	Latin Small Letter U with Circumflex
ü	252	Latin Small Letter U with Diaeresis
ý	253	Latin Small Letter Y with Acute
þ	254	Latin Small Letter Thorn
ÿ	255	Latin Small Letter Y with Diaeresis

PLC Communications Setup

C

In this Appendix....

— Allen-Bradley PLC Communications Setup
    MicroLogix DF1 Full Duplex
    MicroLogix DF1 Half Duplex
    MicroLogix DH485/AIC
    SLC 5/03, 5/04 and 5/05 DF1 Full Duplex
    SLC 5/03, 5/04 and 5/05 DF1 Half Duplex
    SLC 500, 5/01, 5/02 and 5/03 D485/AIC
    PLC 5 DF1
    Data Highway Plus
    Remote I/O
— Aromat
— Control Techniques
— Control Technology Corporation (CTC)
— Generic DeviceNet I/O Communications Setup
— DirectLogic PLC Communications Setup
— Generic EtherNet/IP Communications Setup
— General Electric (GE) PLC Communications Setup
    GE 90-30/90-70 SNPX
    GE VERSAMAX
— Idec
— Mitsubishi PLC Communications Setup
    Mitsubishi CC Link
— Modicon PLC Communications Setup
— Omron PLC Communications Setup
— Generic Profibus-DP Communications Setup
— Siemens S7 MPI Adapter Communications Setup
    Siemens S7_200
— Entivity's Think & Do (WinPLC) Communications Setup
— Texas Instruments
— Uni-Telway
— Universal Ethernet: Ethernet I/P, DF1 over Ethernet,
    Modbus TCP/IP, GE SRTP

IMPORTANT NOTE:

This section provides examples of the communications setup for several PLC types. It is provided for your reference and is not intended to cover all PLCs and applications.

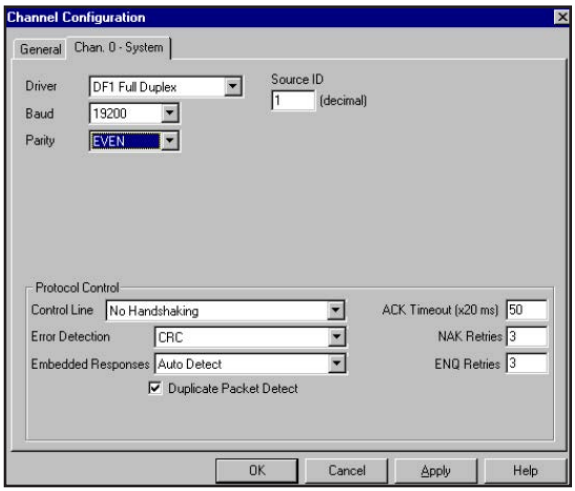
New PLC drivers will be added to the EZ Series Touch Panel Editor Programming Software based on customer feedback. If your PLC driver is not shown here, please check www.EZAutomation.net for the latest version of EZ Series Touch Panel Editor Programming Software (P/N EZ-PANELEDIT) and check the EZ Series Touch Panel Editor Programming Software Help File to see if your PLC has been added.

Allen-Bradley PLC Communications Setup

MicroLogix DF1 Full Duplex

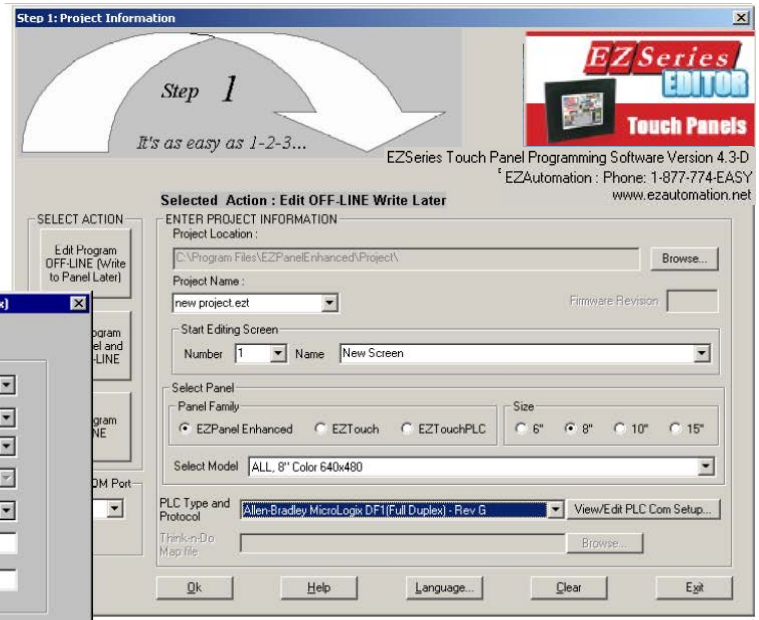
The following screens provide you with an example of how to set up a MicroLogix PLC with DF1 Full Duplex Protocol.

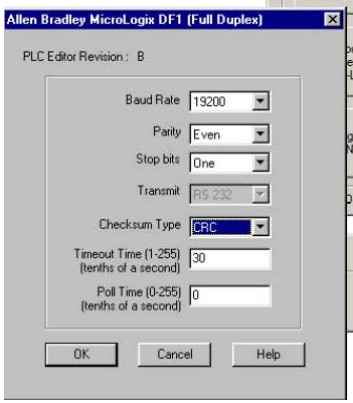
To set up the MicroLogix PLC (DF1 Full Duplex) using RSLogix configuration software, program the Channel Configuration screen as shown to the right.



Open EZ Series Touch Panel Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.





MicroLogix DF1 Half Duplex

(use this driver if connecting to 1747KE Module)

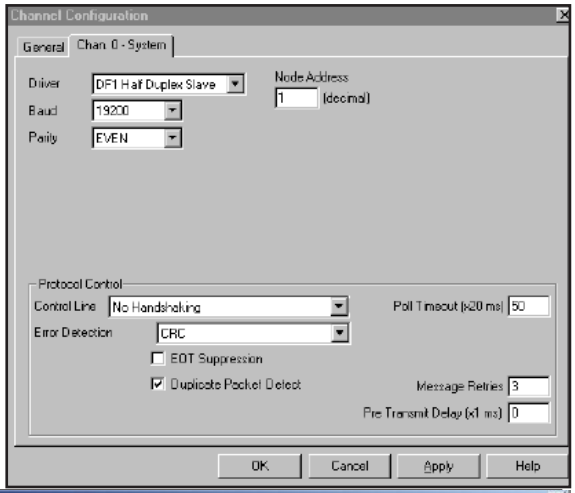
The following screens provide you with an example of how to set up a MicroLogix PLC with DF1 Full Duplex Protocol.

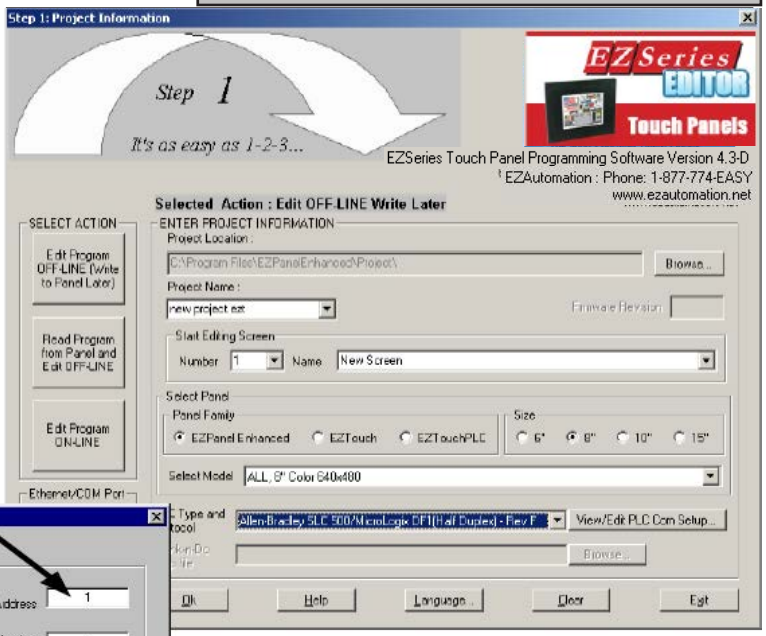
To set up the MicroLogix PLC (DF1 Full Duplex) using RSLogix configuration software, program the Channel Configuration screen as shown to the right.

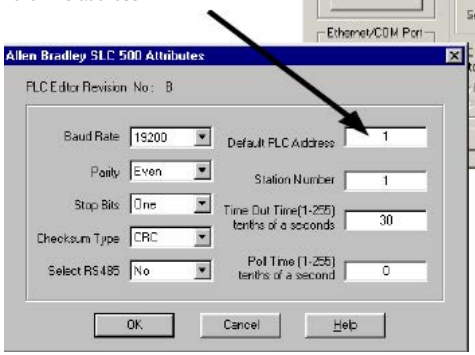
Open EZ Series Touch Panel Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.

NOTE: If attached to a 1747KE communication module, the PLC address is the address of the processor that the module is attached to. Station Number is the Station number assigned to the KE module. If attached directly to a processor, the PLC address is not used. The Station Number refers to the PLC address.



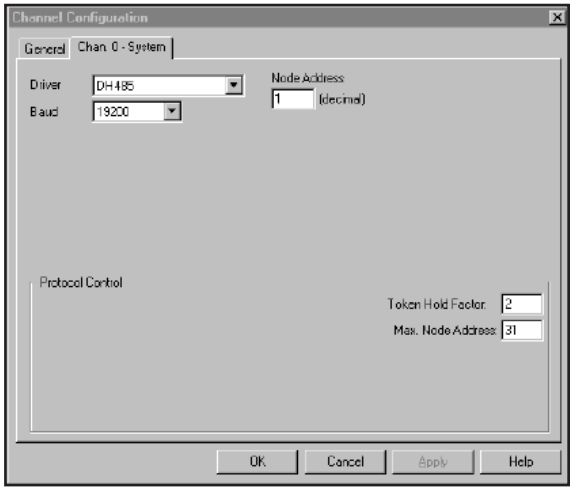




NOTE on TAGS for this type PLC:
If communicating to other than the default PLC, the address string must be preceded by the PLC address of the unit you want to communicate with. For example, 3-N7:0 is PLC address 3.

MicroLogix DH485/AIC

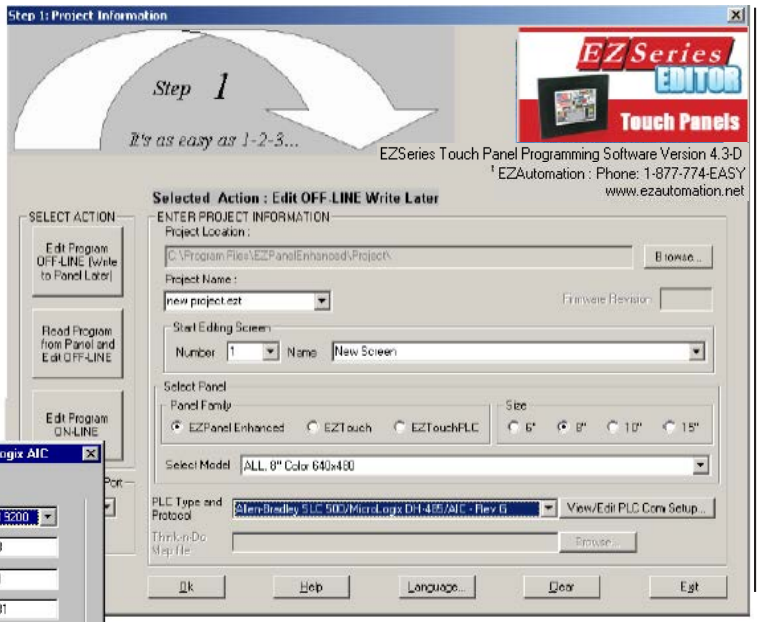
The following screens provide you with an example of how to set up a MicroLogix PLC with DH485 Protocol.



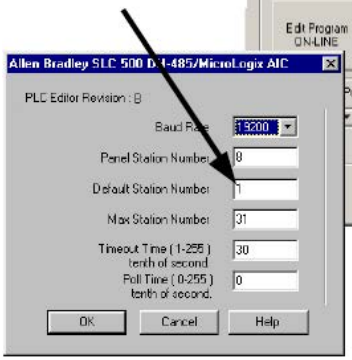
To set up the MicroLogix PLC (DH485) using RSLogix configuration software, program the Channel Configuration screen as shown to the right.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information screen as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.



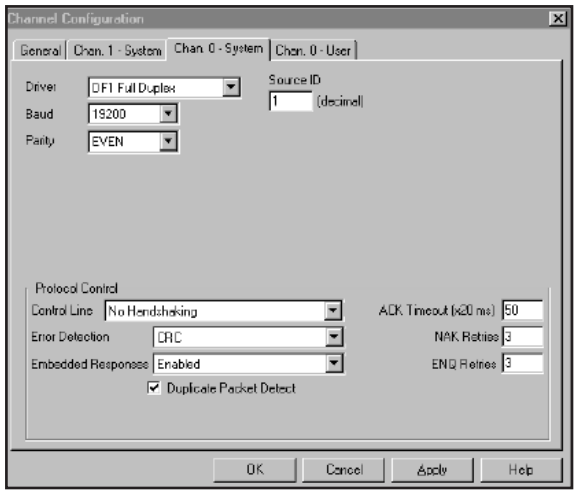
NOTE: The **Default PLC Address** (**Default Station Number**) can be any valid unused address from 0 to 31.



NOTE on TAGS for this type PLC:
If communicating to other than the default PLC, the address string must be preceded by the PLC address of the unit you want to communicate with. For example, 3-N7:0 is PLC address 3.

SLC 5/03, 5/04, and 5/05 DF1 Full Duplex

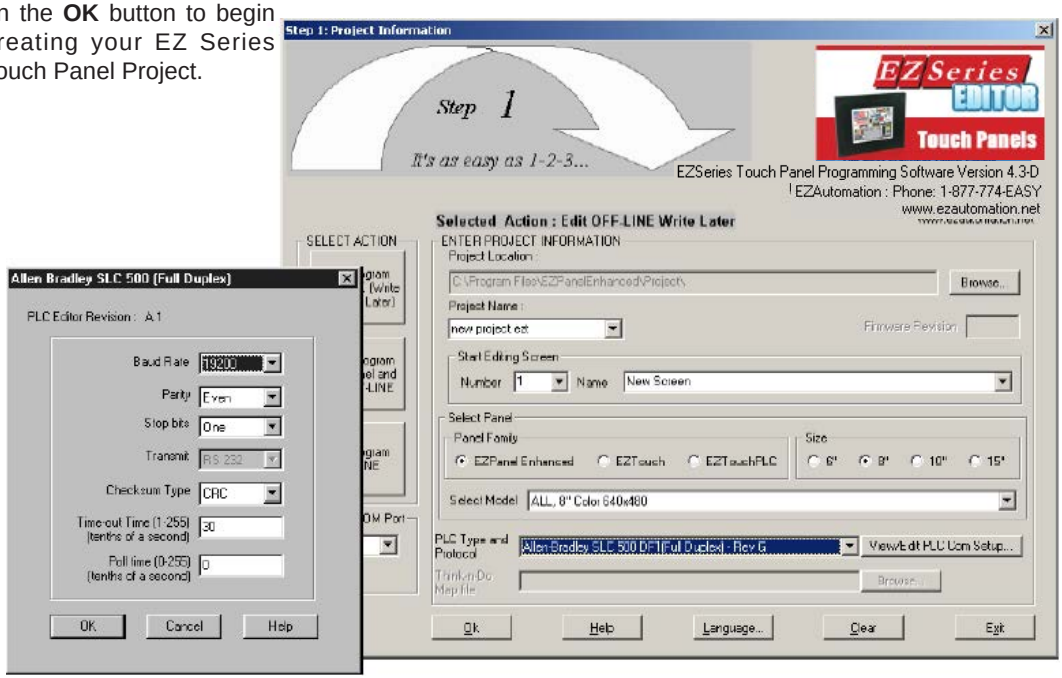
The following screens provide you with an example of how to set up a SLC 500 Series PLC with DF1 Full Duplex Protocol.



To set up the SLC 500 PLC (DF1 Full Duplex) using RSLogix configuration software, program the Channel Configuration screen as shown to the right.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.

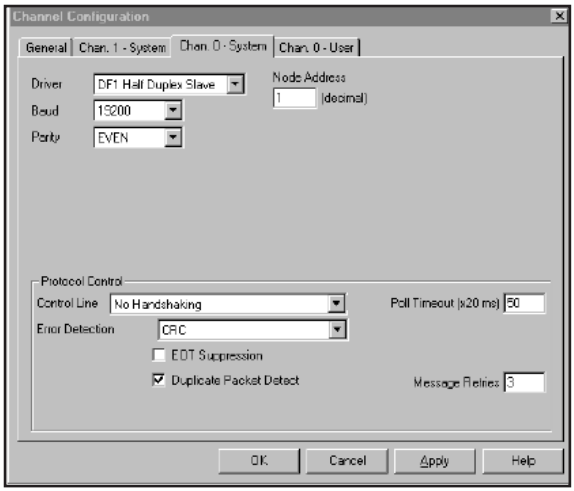


SLC 5/03, 5/04, and 5/05 DF1 Half Duplex

(use this driver if connecting to 1747KE Module)

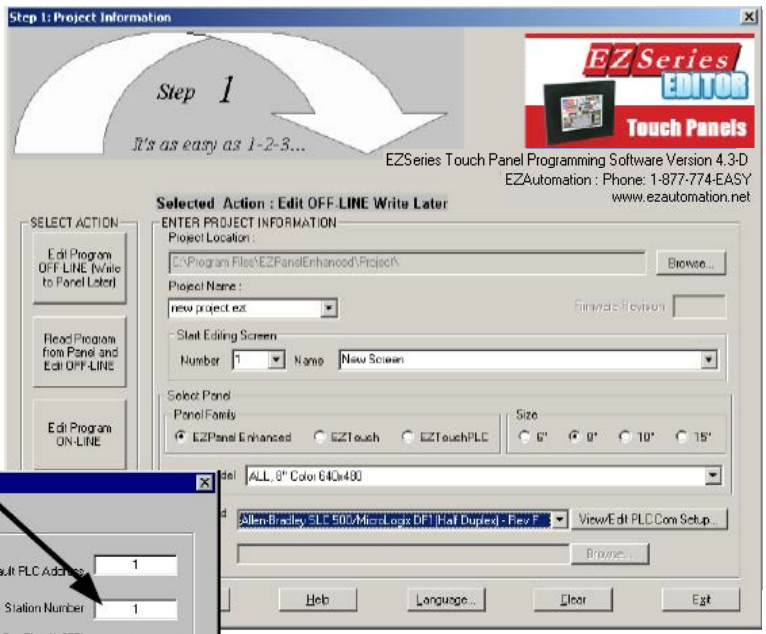
The following screens provide you with an example of how to set up a SLC 500 Series PLC with DF1 Half Duplex Protocol.

To set up the SLC 500 PLC (DF1 Half Duplex) using RSLogix configuration software, program the Channel Configuration screen as shown to the right.

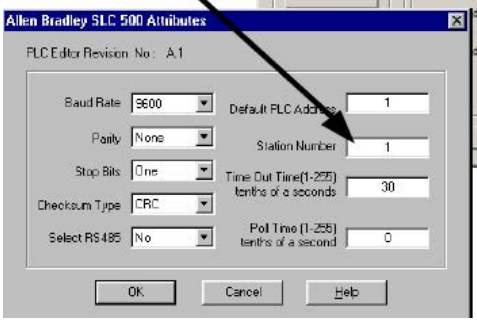


Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.



NOTE: If attached to a 1747KE communication module, the PLC address is the address of the processor that the module is attached to. Station Number is the Station number assigned to the KE module. If attached directly to a processor, the PLC address is not used. The Station Number refers to the PLC address.

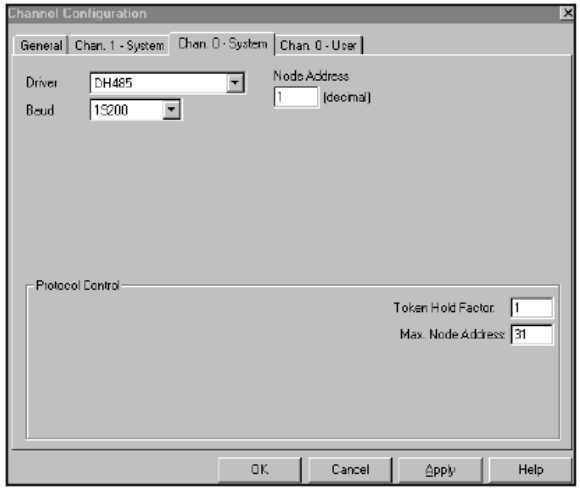


NOTE on TAGs for this type PLC:
If communicating to other than the default PLC, the address string must be preceded by the PLC address of the unit you want to communicate with. For example, 3-N7:0 is PLC address 3.

SLC 500, 5/01, 5/02 and 5/03 DH485/AIC

The following screens provide you with an example of how to set up a SLC500 Series PLC with DH485 Protocol.

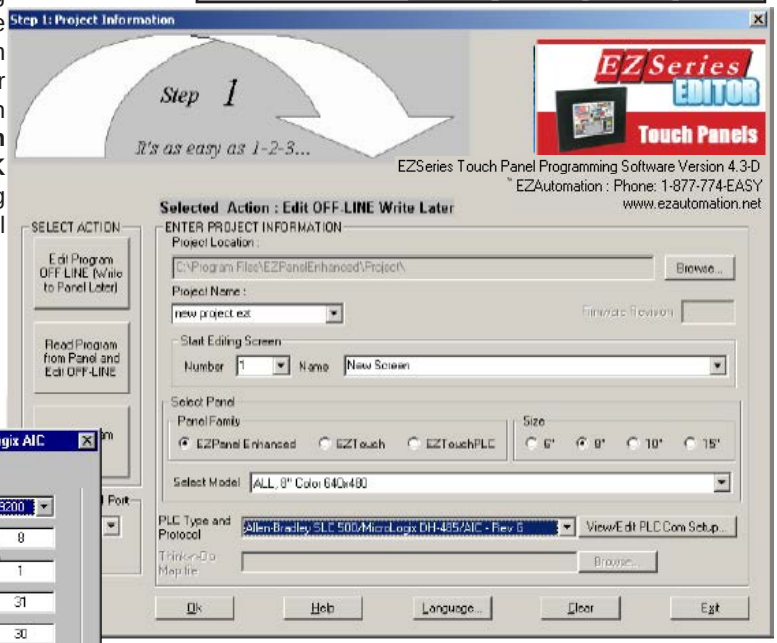
To set up the SLC500 PLC (DH485) using RSLogix configuration software, program the Channel Configuration screen as shown to the right.

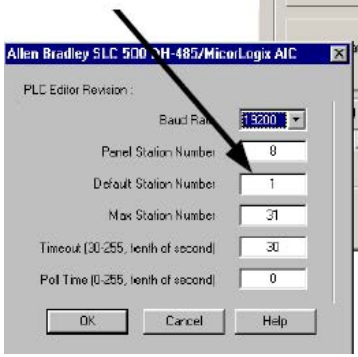


Open EZ Series Touch Panel Editor Programming Software and configure Project Information screen as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.

NOTE: The **Default PLC Address** can be any valid unused address from 0 to 31.





NOTE on TAGs for this type PLC:
If communicating to other than the default PLC, the address string must be preceded by the PLC address of the unit you want to communicate with. For example, 3-N7:0 is PLC address 3.

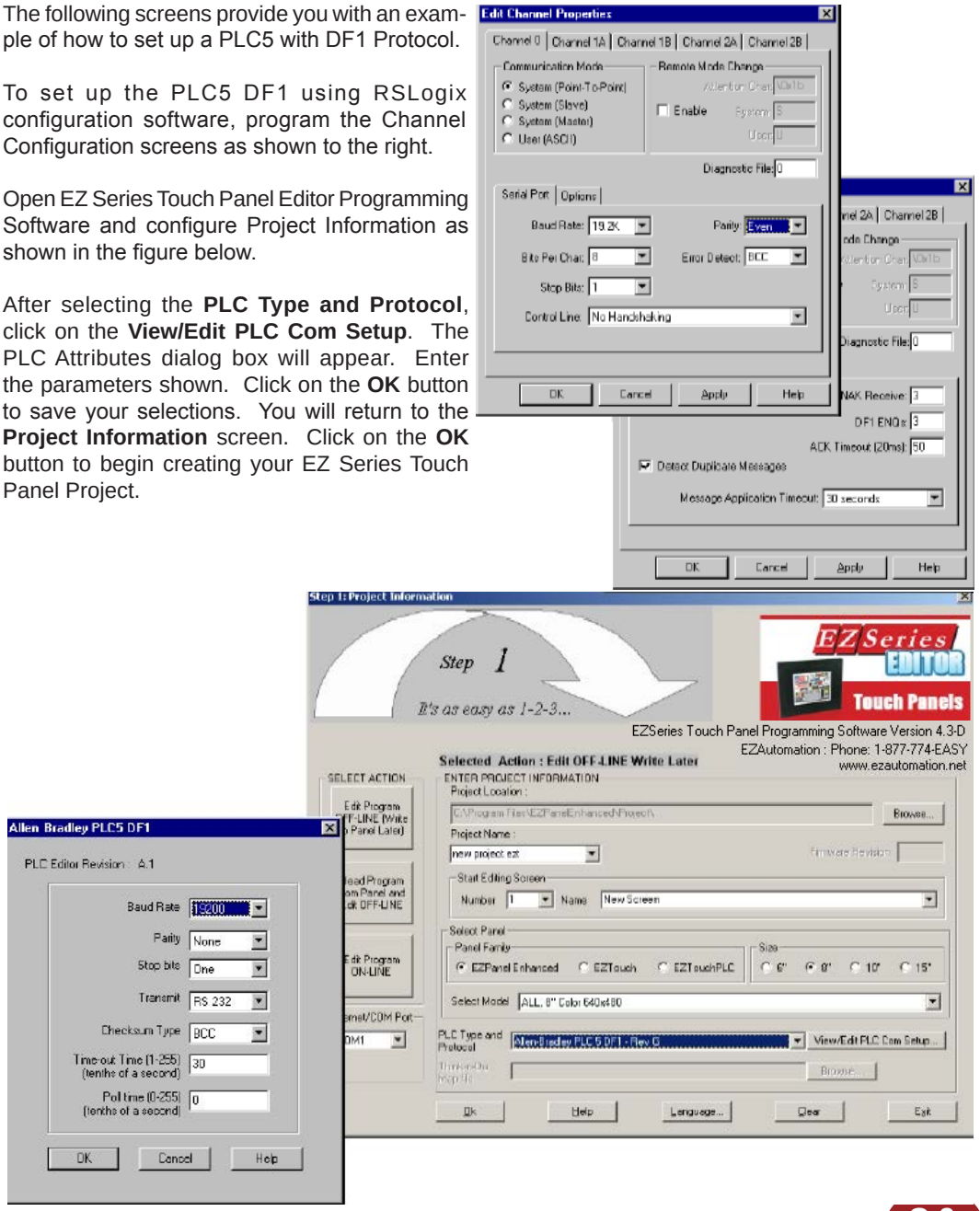
PLC5 DF1

The following screens provide you with an example of how to set up a PLC5 with DF1 Protocol.

To set up the PLC5 DF1 using RSLogix configuration software, program the Channel Configuration screens as shown to the right.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.

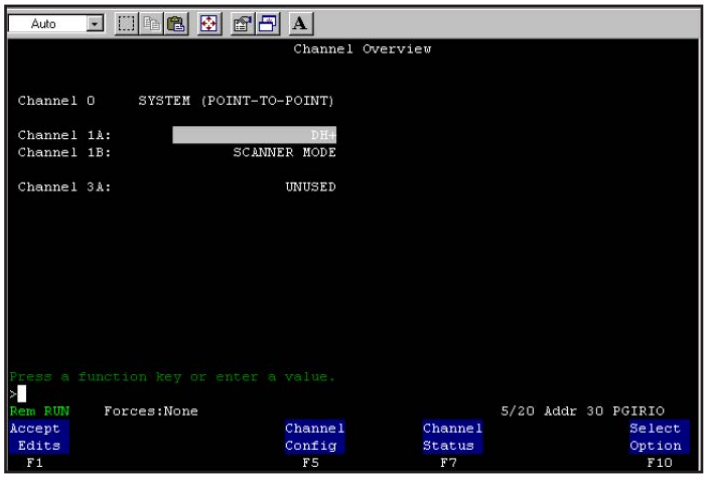


Data Highway Plus

The following screens provide you with an example of how to set up a PLC5 with Data Highway Plus Protocol.

To set up the PLC5 with DH+ using PLC-5 Programming Software Series A 6200, program the Channel Configuration screens as shown below.

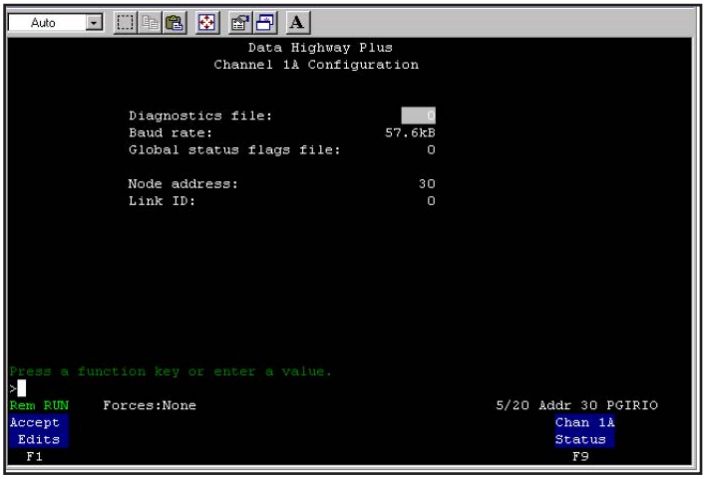
Select **DH+** to highlight, and then press **F5** to access the Channel Configuration screen.



Configure as shown in the screen to the right.

NOTES:
1) Panel baud rate must match PLC baud rate

2) Default PLC Station Number must match PLC Node address.

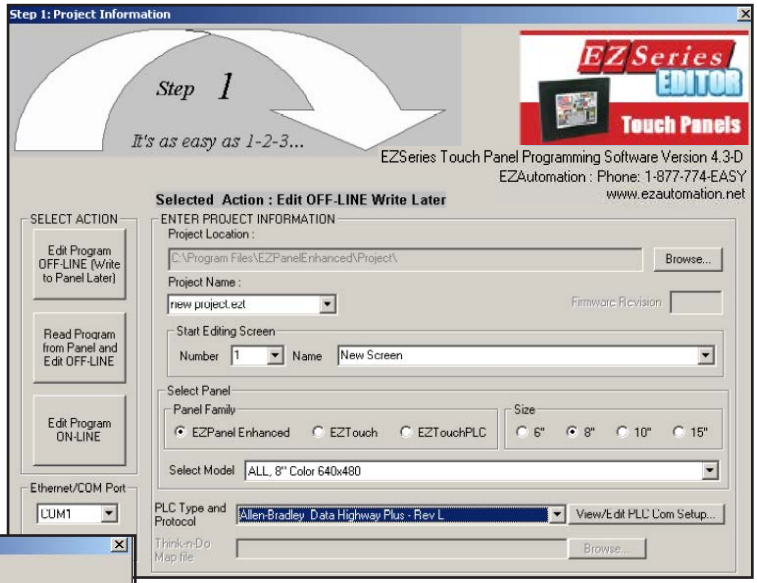


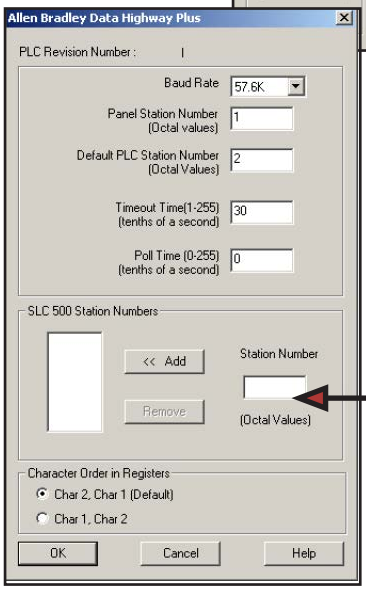
Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown.

Click on the **OK** button to save your selections.

You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.





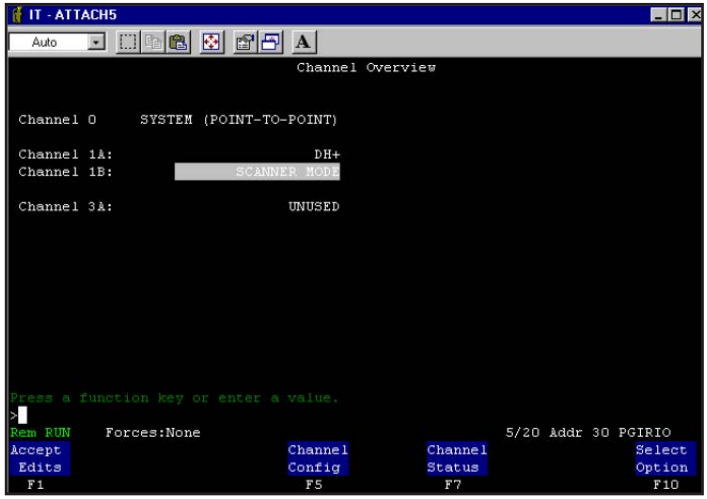
NOTE: If connecting to a SLC500, the Station Number of the SLC500 MUST be entered here.

Remote I/O

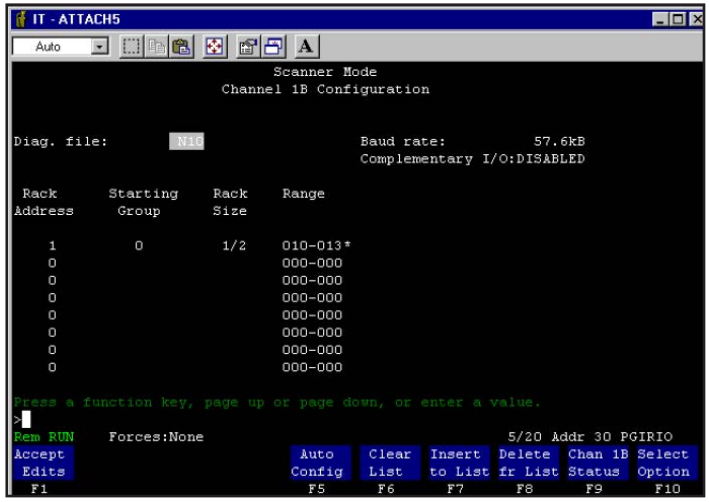
The following screens provide you with an example of how to set up a PLC5 with Remote I/O Protocol.

To set up the PLC5 with Remote I/O using PLC-5 Programming Software Series A 6200, program the Channel Configuration screens as shown below.

This screen is the Channel overview. Highlight the Channel setting (in this case Channel 1B is set for Scanner Mode). Once setting is highlighted press F5 key to access next screen.



NOTES:
1) Panel baud rate must match PLC baud rate.
2) Rack assignment of the PLC must include rack assignments designated in the panel.



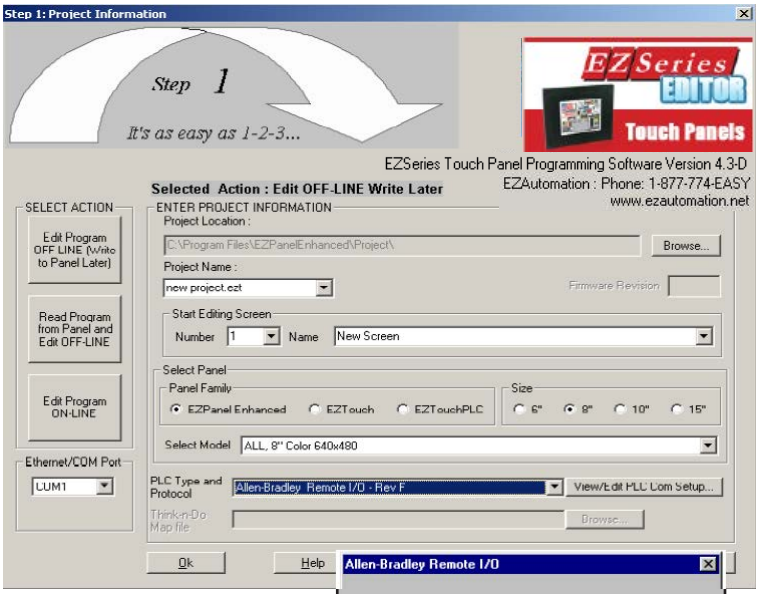
Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.

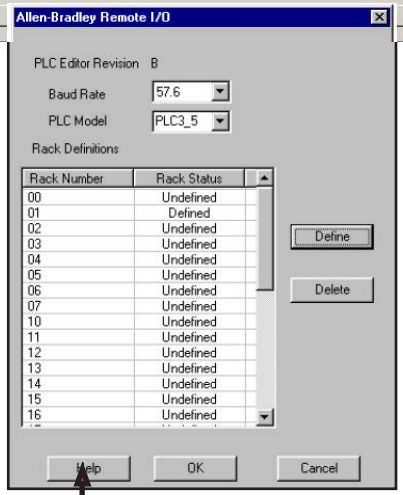
After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear.

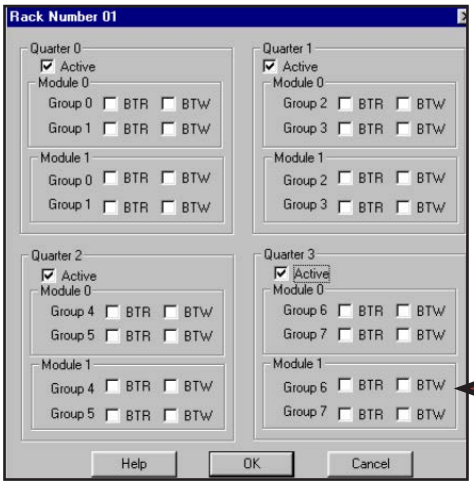
Click on **Rack Number 01** in the list to highlight and then click on the **Define** button. Make the selections shown.

Click on the **OK** button to save your selections. **Rack Number 01** will show **Rack Status** as **Defined**. Click on **OK**.

You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.





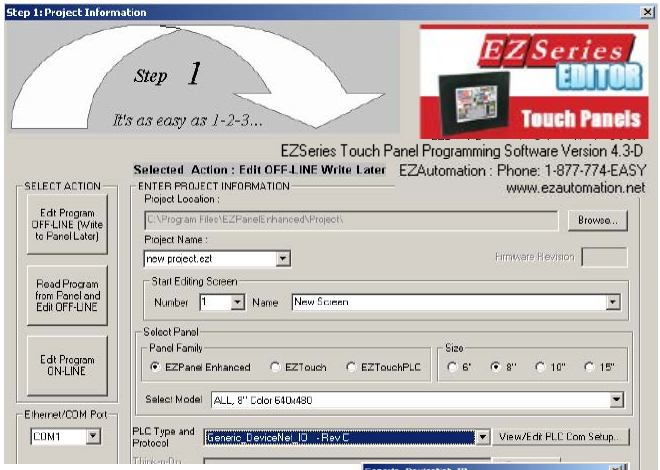


EZ Series Touch Panel simulates Remote I/O Racks. Define the Racks where the Panel will reside.

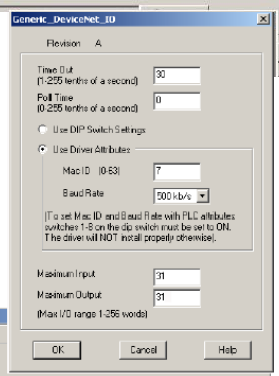
Generic DeviceNet I/O Communications Setup

The following screens provide you with an example of how to set up a Generic DeviceNet I/O Network project using RSNetWorx configuration software with an Allen-Bradley 1747-SDN Scanner Module.

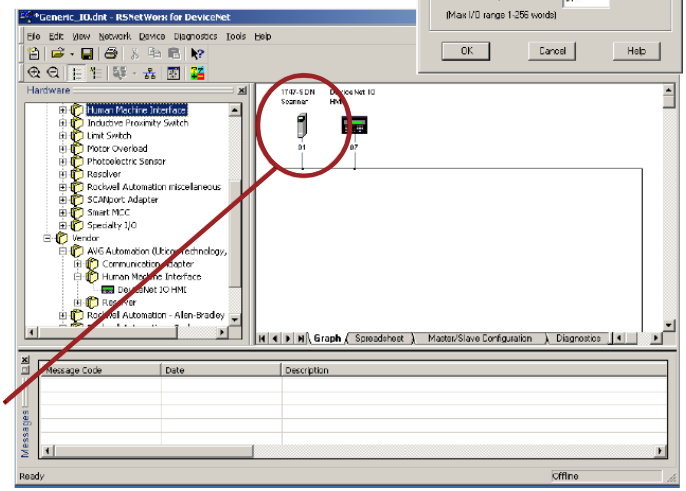
To set up DeviceNet I/O communications, open EZ Series Touch Panel Editor Programming Software and configure **Project Information** screen as shown in the figure to the right.



After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown (remember this is an example, you must enter parameters that are applicable to your system configuration). Click on the **OK** button to save your selections.

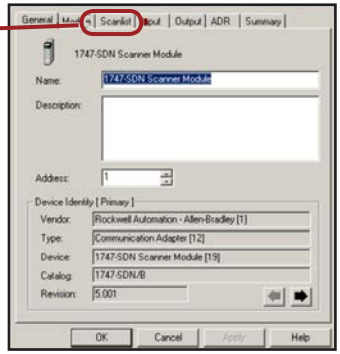


1. Download the project to the panel.
2. Attach the panel to the DeviceNet network.
3. Run RSNetWorx.
4. Now, you must commission the Generic DeviceNet I/O .EDS file using RSNetWorx. You'll find the .EDS file under the EZ Series Touch Panel Editor Programming Software directory that was created when you installed the software. (The default directory is C:\Program Files\ EZ Series Touch Panel.)

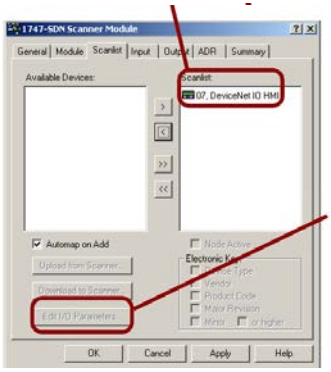


5. Scan the network so the DeviceNet software will find the EZ Series Touch Panel and place it on the network.
6. Click on the Scanner Module icon.

7. The Scanner Module window will open. Click on the **Scanlist** tab.



8. Look in field under **Available Devices**, and find the **DeviceNet I/O HMI** (this represents the panel.) Click on it to highlight and then click on the button to add to the **Scanlist**.

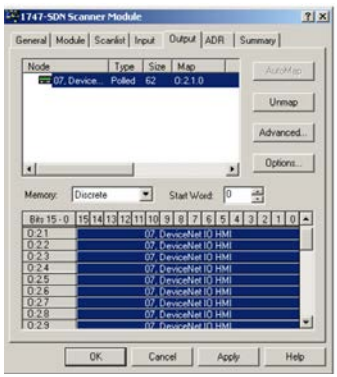


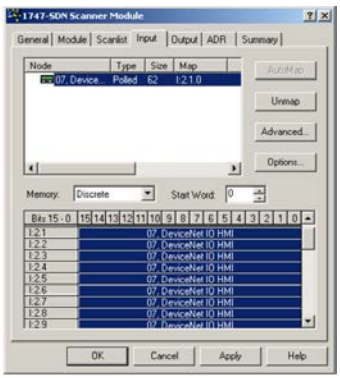
9. Click on the **Edit I/O Parameters button**.

10. Match the **Input Size** and **Output Size** to the attributes that you set up in the EZ Series Touch Panel Editor Programming Software project.

11. Click on **OK** button, the Inputs and Outputs will be mapped to the scanner module.

12. The following two bitmaps show examples of the Output and Input Mapping to the scanner module. (This example uses discrete I/O mapping. It is possible to map this to the M0/M1 files.)



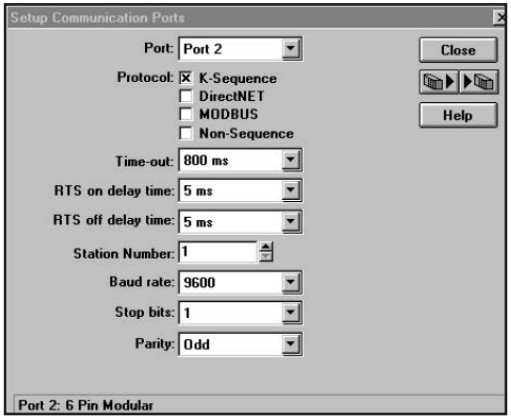


13. Return to **EZ Series Touch Panel Editor Programming Software** and begin creating your EZ Series Touch Panel project.

DirectLogic PLC Communications Setup

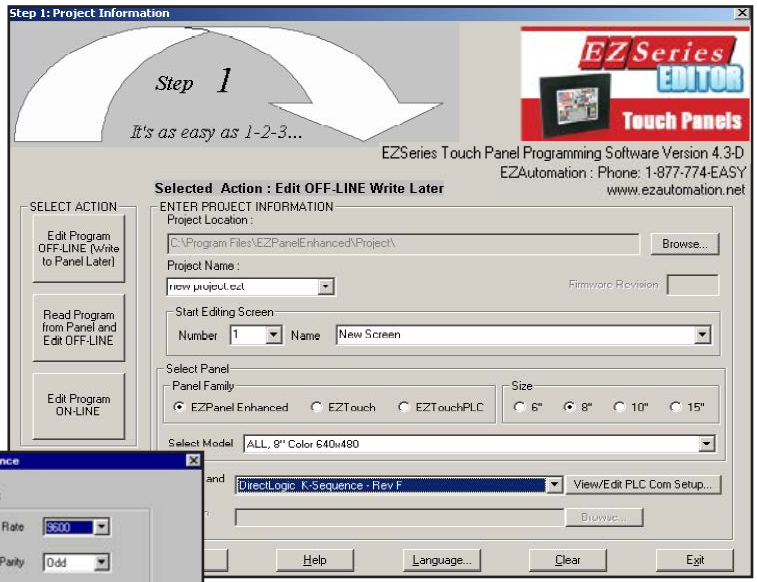
K-Sequence, DirectNet and Koyo Modbus

The following screens provide you with an example of how to set up a DirectLogic PLC with K-Sequence Protocol using DirectSoft configuration software.

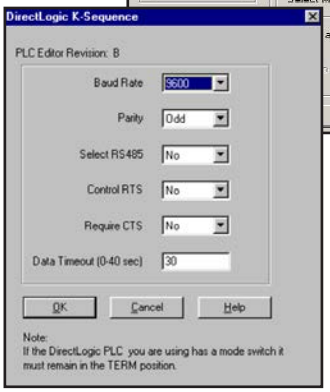


To set up the DL05 PLC K-Sequence using DirectSoft configuration software, program the Setup Communication Ports screen as shown to the right. DirectNet and Modbus are selected here also.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information screen as shown in the figure below.



After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.

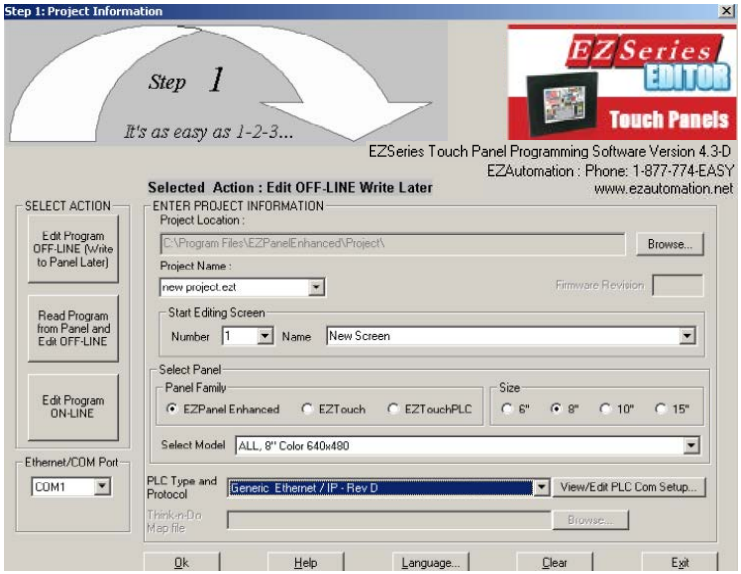


NOTE on TAGs for this type PLC:
The PLC driver defaults to station 1. To communicate with another station number, the map string must be preceded by the station number of the unit you want to communicate with. For example, 4-V2000 to communicate with station number 4.

Generic EtherNet/IP Communications Setup

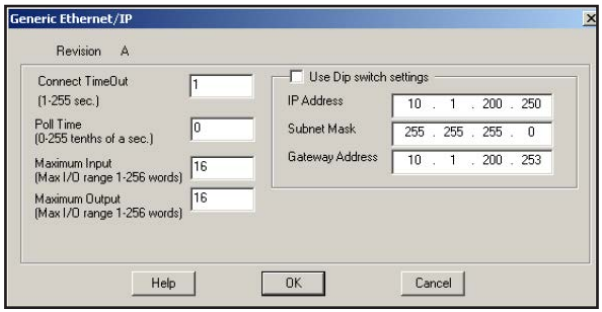
The following screens provide you with an example of how to set up a Generic Ethernet /IP Network project using RSLogix 5000 configuration software. This example assumes that the EtherNet/IP Bridge module has been added to the configuration in the Control Logix PLC.

To set up EtherNet/IP communications, open EZ Series Touch Panel Editor Programming Software and configure **Project Information** screen as shown in the figure to the right.



After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown (remember this is an example, you must enter parameters that are applicable to your system configuration). Click on the **OK** button to save your selections.

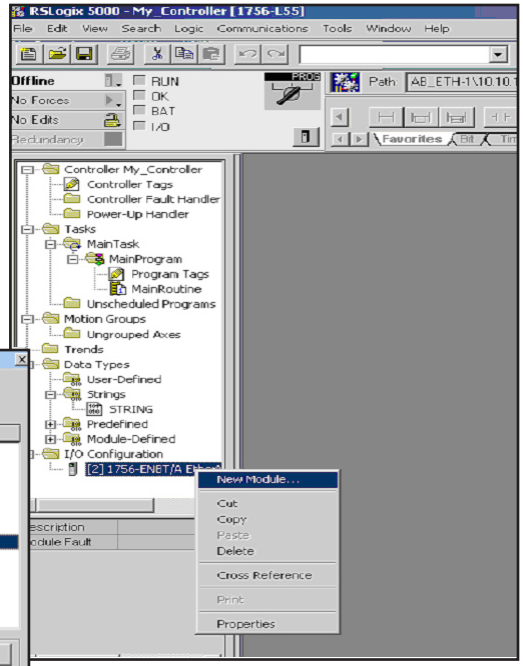
Please Note: There are special considerations when the panel is connected to a n Ethernet/IP network: When leaving the panel Setup Mode, all values currently residing in the INPUT TAGS are cleared to a value of 0 (zero). Also, when leaving the panel Setup Mode, there is a delay of approximately 10 to 15 seconds (while the Ethernet/IP interface card is being initialized) before the panel values being displayed are updated.



1. Download the project to the panel.
2. Attach the panel to the Ethernet/IP network.

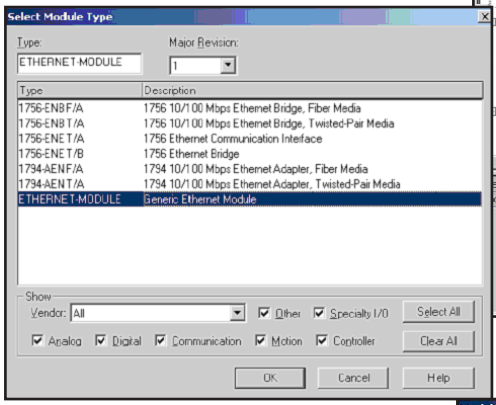
3. Run RSLogix 5000.

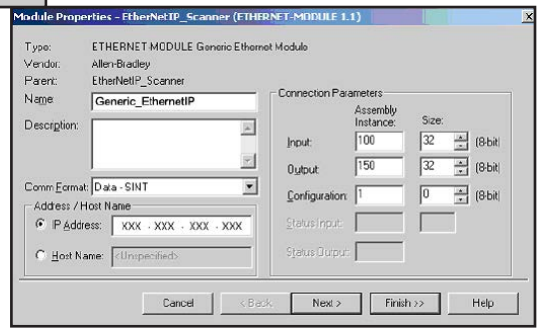
4. Under **I/O Configuration**, right click the Ethernet Module, and from the pop up menu select New Module, as shown to the right.



5. The **Select Module Type** window will appear. Select Generic Ethernet Module, as shown below.

6. In the next window, RSLogix will ask for information regarding the communication to the Generic Module. Enter a name for the module. (We have used **Generic_EthernetIP**.) This name will create a tag in RSLogix that can be used to access the memory location in the PLCs memory where the data for the Generic Ethernet/IP module will be stored.



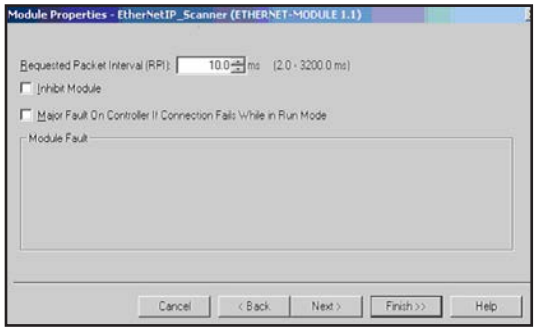


7. Select the **Comm Format**. Here we have selected **Data- SINT** that will represent the data in the Generic module as a field of 8-bit bytes.

8. I/O data is accessed in input instance 100 and output instance 150, so these values havеot be entered as the instance values for input and output. The size of the input connection and the output connection should correspond to the size that we have configured the Generic module for. In this case we are using 32 bytes of input data, so that is the size we will enter (in both input and output).

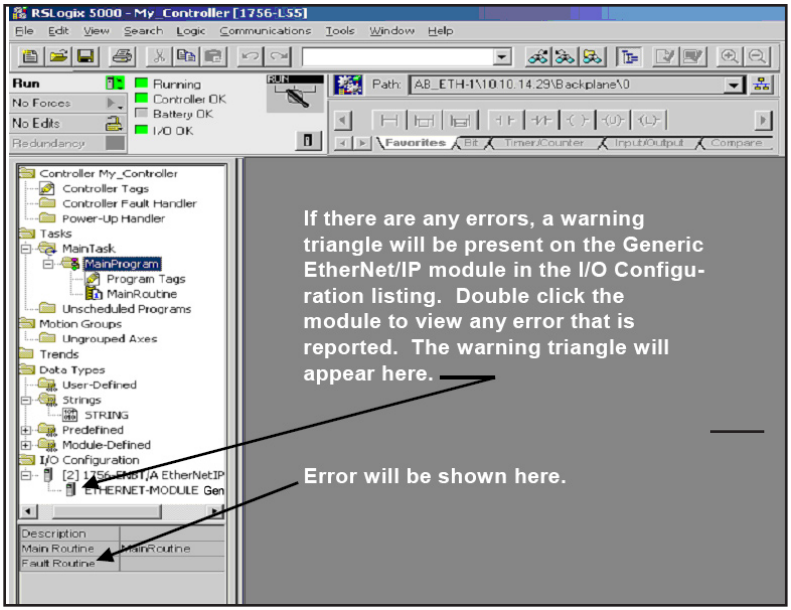
9. The Generic Module does not support a configuration assembly, but RSLogix requires that a value be entered here. An instance value of 0 is not a valid instance ID, but any non-zero value will work. We have selected 1. The data size of the configuration instance is then set to 0.

10. As a final step we enter the **IP Address** that we have configured for the module. Press the **Next** button. The dialog box to the right will open.



11. Enter a value for the time between each scan of the module. For this example, we will leave it at the default of 10 msec. Click on the **Finish** button.

12. The Generic Module has been added to the configuration in RSLogix. Select **Go Online** in the **Communications Menu** and download



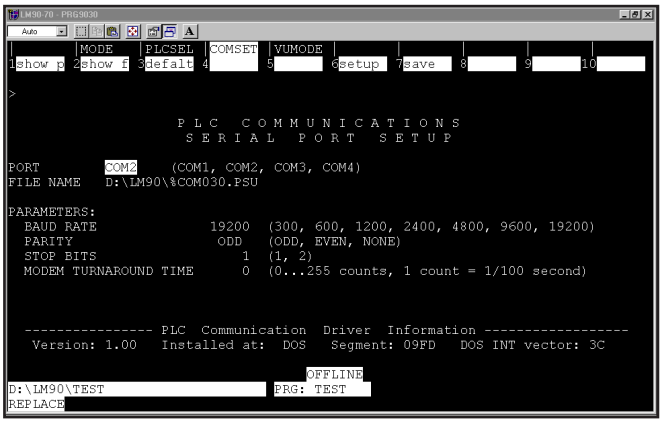
the configuration. The configuration will now be downloaded to the PLC, and if no errors are detected, the window will look as follows.

13. Return to **EZ Series Touch Panel EditorProgramming Software** and begin creating your EZ Series Touch Panel project.

General Electric (GE) PLC Communications Setup

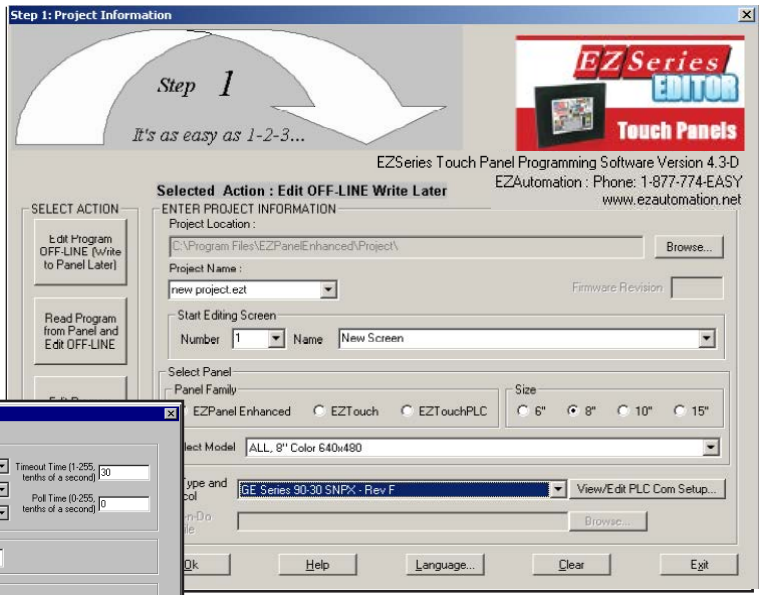
GE 90-30/90-70 SNPX

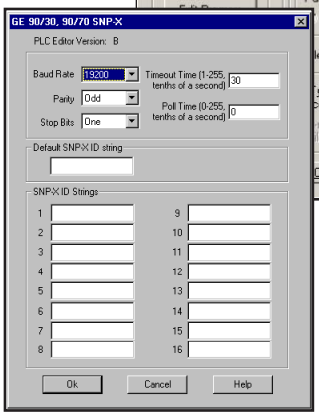
The following screens provide you with an example of how to set up a GE 90-30 PLC with SNPX Protocol.



Open EZ Series Touch Panel Editor Programming Software and configure Project Information screen as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.

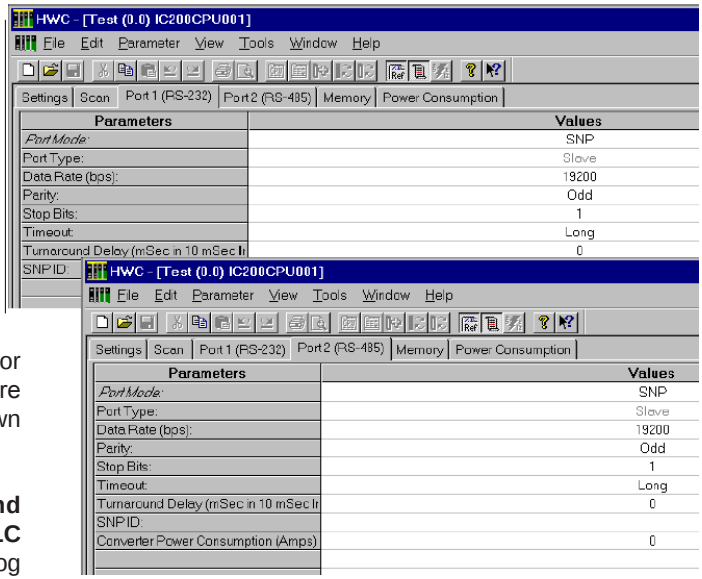




GE VERSAMAX

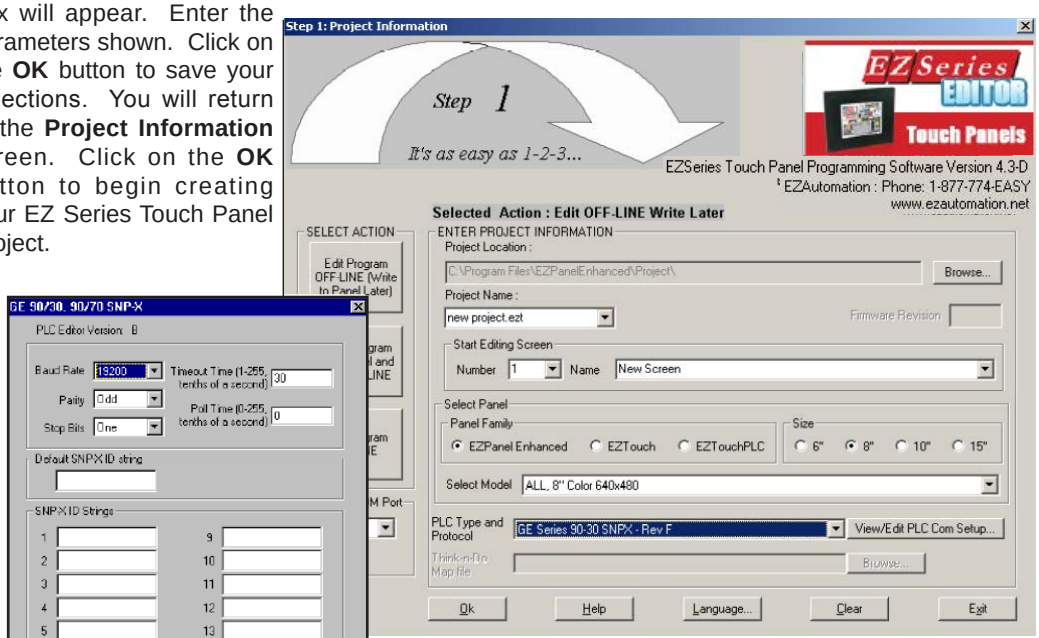
The following screens provide you with an example of how to set up a GE Versamax PLC with SNP Protocol.

To set up the PLC using GE Fanuc Software VersaPro configuration software, program the Port 1 and Port 2 as shown to the right.



Open EZ Series Touch Panel Editor Programming Software and configure Project Information screen as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.



Mitsubishi PLC Communications Setup

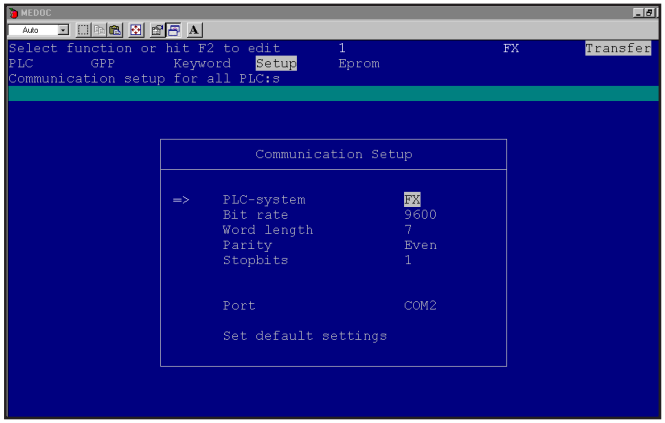
Melsec FX

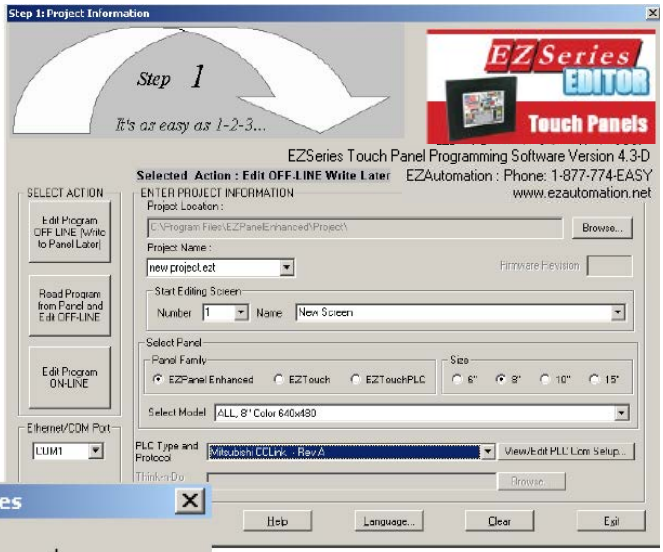
The following screens provide you with an example of how to set up a MFX PLC Communications Driver.

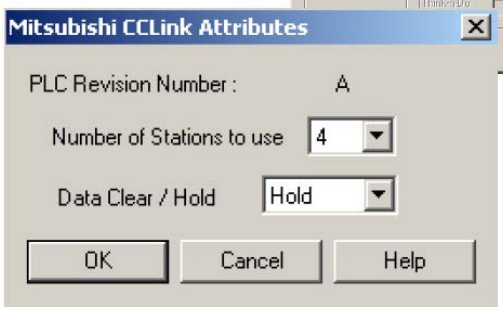
To set up the MFX PLC using MEDOC configuration software, program the Communication Setup screen as shown to the right.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information screen as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.





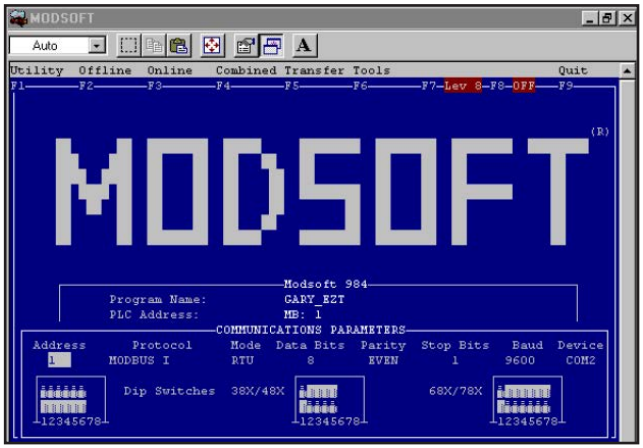


Modicon PLC Communications Setup

Modbus RTU

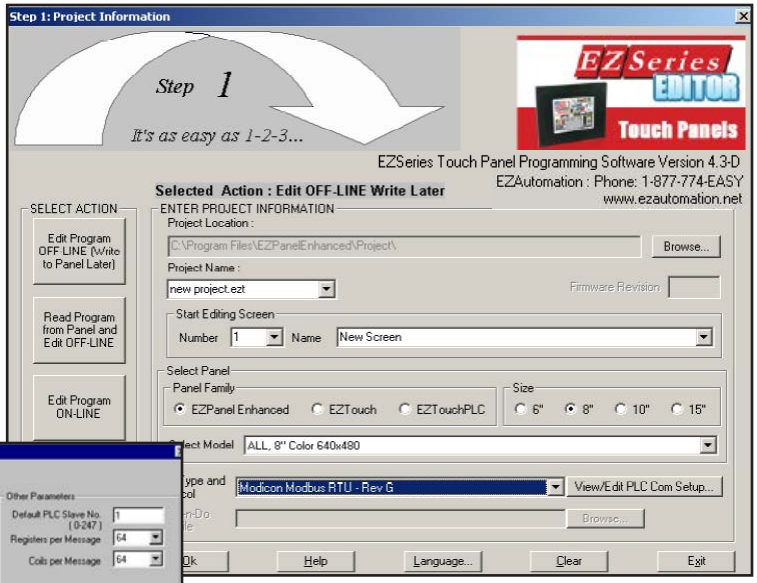
The following screens provide you with an example of how to set up a Modicon PLC with Modbus RTU Protocol.

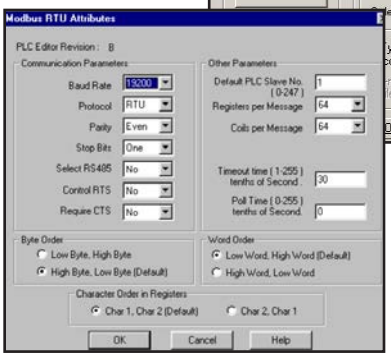
To set up the Modicon Modbus RTU using MODSOFT configuration software, program the PLC Communications Parameters screen as shown to the right.



Open EZ Series Touch Panel Editor Programming Software and configure Project Information screen as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.





NOTE on TAGs for this type PLC:
If communicating to other than the default PLC, the address string must be preceded by the PLC address of the unit you want to communicate with. For example, 3-40001 is PLC address 3.

OMRON C200 and C500 PLC Communications Setup

The following provides you with an example of how to set up an OMRON PLC.

OMRON PLC's Host Link setup configuration is done by setting a series of switches on the Host Link unit. Set the switches in accordance with the figure and tables provided below.

Setting Switches

Before setting switches, be sure to turn off the power to the PC. Using a standard screwdriver, set each switch so that the desired set value appears on the window below the switch. SW1 to SW4 are set to 0 as a factory-set condition.

SW1	Unit No.
SW2	
SW3	Transmission Rate
SW4	Command level, parity, transmission format

FRONT PANEL SWITCH SETTINGS

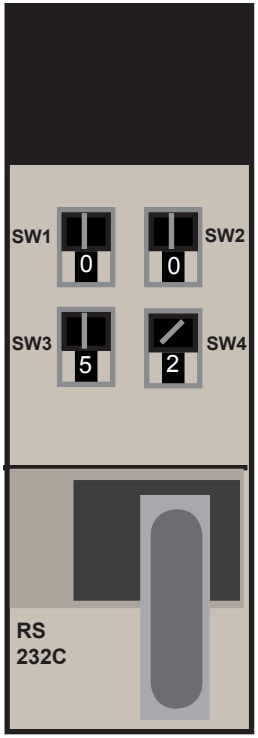
SW1 and SW2

Set the Unit No. of the Host Link Unit by using SW1 and SW2. A Unit No. from 00 to 31 can be set. Do not set the same Unit No. in duplicate.

SW3

Sets the transmission speed. Match the transmission speed of the Host Link Unit to the host computer.

SW3	Transmission Speed
0	300 bps
1	600 bps
2	1,200 bps
3	2,400 bps
4	4,800 bps
5	9,600 bps
6	19.2K bps
7	Inhibited
8	
9	



SW4

Sets the command level, parity, and transmission format.

SW4	Command Level	Parity	Transmission Format
0	Only 1	Even	ASCII, 7 bits, w/2 stop bits
1	1 and 2		
2	1, 2, and 3		
3	Inhibited		
4	Only 1	Odd	
5	1 and 2		
6	1, 2, and 3		
7	Inhibited		
8	Only 1	Even	JIS, 8 bits, w/1 stop bit
9	1 and 2		
A	1, 2, and 3		
B	Inhibited		
C	Only 1	Odd	
D	1 and 2		
E	1, 2, and 3		
F	Inhibited		

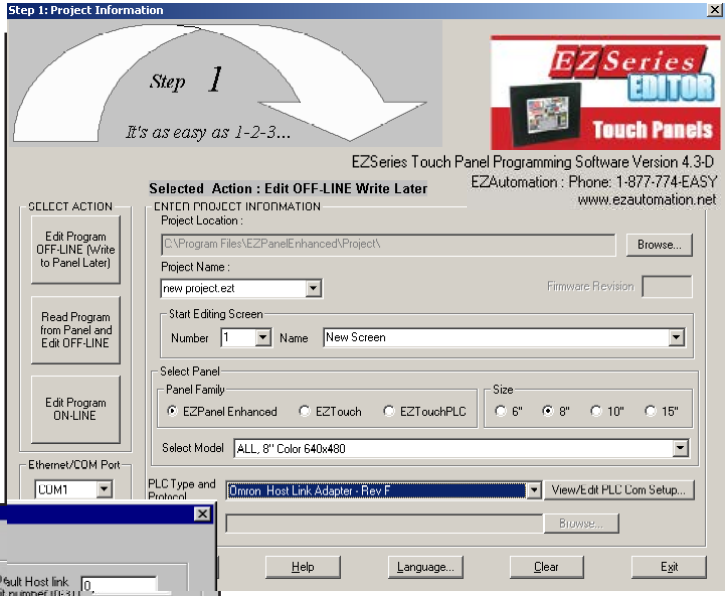
BACK PANEL SWITCH SETTINGS

Set Switches SW1 through SW4 in the OFF position as shown in the figure below. This is the **Single-Link** setting.

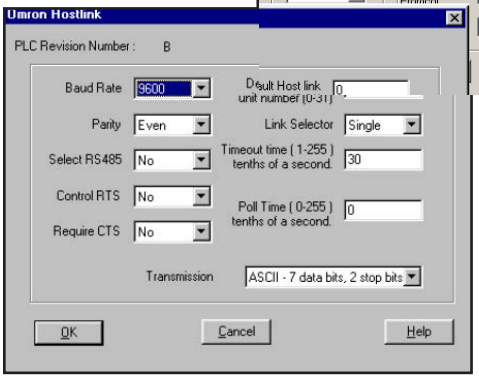
Set **CTS Switch** to always ON (the 0, or down position).

Switch No.	Function	ON	OFF
1	Not used		
2			
3	Operation	1:N	1:1
4	5V Power Supply	Present	Absent

Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure to the right.



After selecting the PLC Type and Protocol, click on **View/ Edit PLC Com Setup.** The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the Project Information screen. Click on the OK button to begin creating your EZ Series Touch Panel Project.

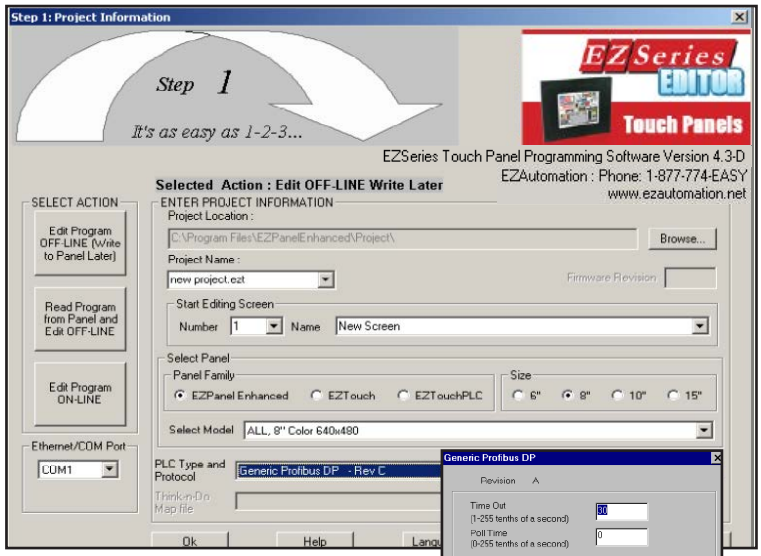


NOTE on TAGs for this type PLC: If communicating to other than the default Host Link Unit, the address string must be preceded by the Host Link Number of the unit you want to communicate with. For example, 2-HR05 is Host Link Unit 2.

Generic Profibus-DP PLC Communications Setup

The following screens provide you with an example of how to set up a Generic Profibus-DP Network project using Simatic Step 7 configuration software.

To set up Profibus-DP communications, open EZ Series Touch Panel Editor Programming Software and configure **Project Information** screen as shown in the figure to the right.



After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown (remember this is an example, you must enter parameters that are applicable to your system configuration). Click on the **OK** button to save your selections.

1. Download the project to the panel.
2. Attach the panel to the Profibus-DP network.
3. Run Simatic Step 7 software.
4. First you must add the GSD file as follows.

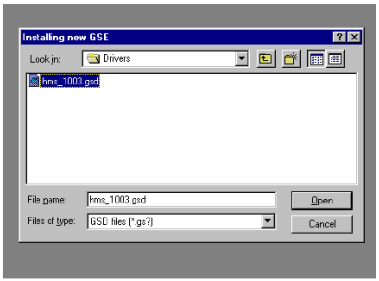
   a. Using the SIMATIC Manager, open the Hardware settings window.

   b. From **Hardware Config** window, choose **OPTIONS>INSTALL NEW GSE...**

   c. The "**Installing new GSE**" window will appear .

   d. You'll find the .GDS file under the EZ Series Touch Panel Editor Programming Software directory that was created when you installed the software. (The default directory is C:\Program Files\EZ Series Touch Panel.) Select "hms_1003.gsd" and click OPEN.

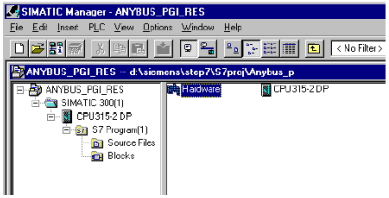
e. Follow the onscreen prompts and the installation is complete.



5. Now you will set up the module as follows:

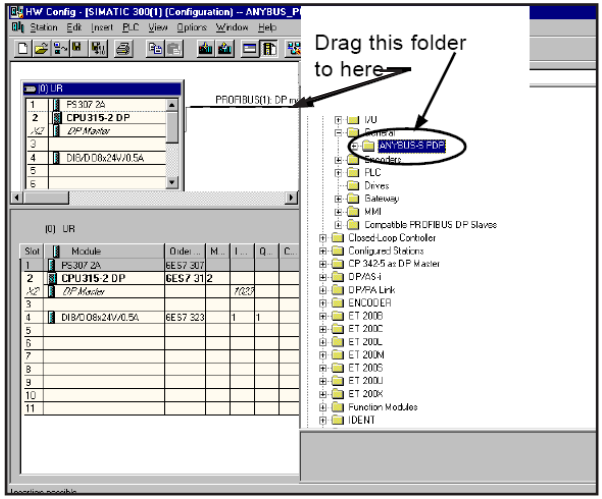
a. Create a **New Project** or **Open** an existing project using SIMATIC Manager

b. Open the **Hardware Configuration** window by double clicking the “Hardware” icon as shown to the right.



c. Select **VIEW>CATALOG** or press CRTL+K to open the catalog shown to the right.

d. Open the **PROFIBUS DP** folder until you get to **ANYBUS-S PDP**. Click on the folder and drag it to the line in the window shown in the picture to the right.

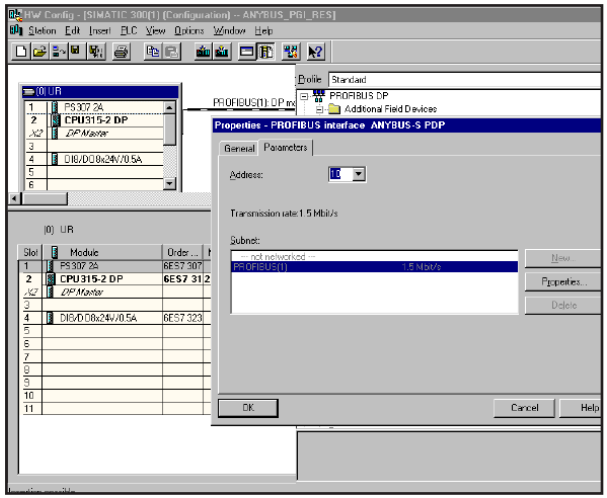


e. The properties window will open as shown to the right (once you drag and drop).

f. Under the **PARAMETERS** tab configure your **PROFIBUS ADDRESS**.

g. Click the **PROPERTIES** button in order to configure the modules profibus connection.

Please Note: When dragging the folder, make sure you have it right on the line before releasing the mouse button.



h. Go to the **NETWORK SETTINGS** tab and configure the "Transmission Rate" you want your module to use.

   NOTE: This must match that of your Profibus Network.

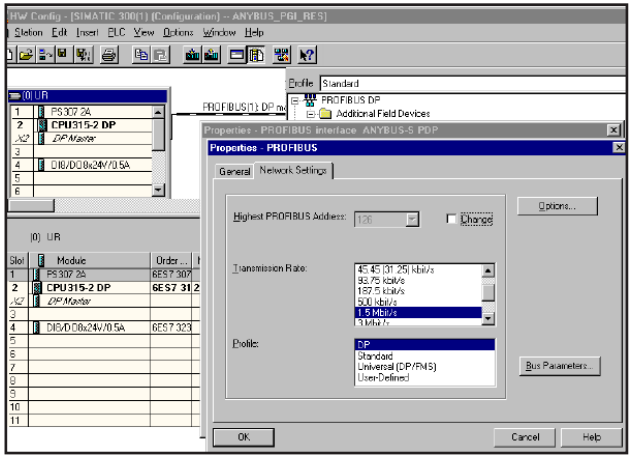
i. Click **OK** to exit the window and save changes.

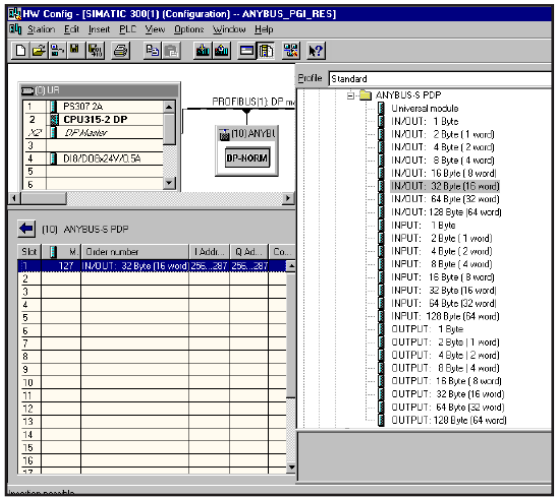
j. Click **OK** again to exit the properties window and save changes.

6. The Module is now set up. All that is left is setting up I/O.

7. To add the I/O, simply double-click the **ANYBUS-S PDP** folder.

8. A list of available I/O will drop down. Drag and Drop the desired I/O from right to left.

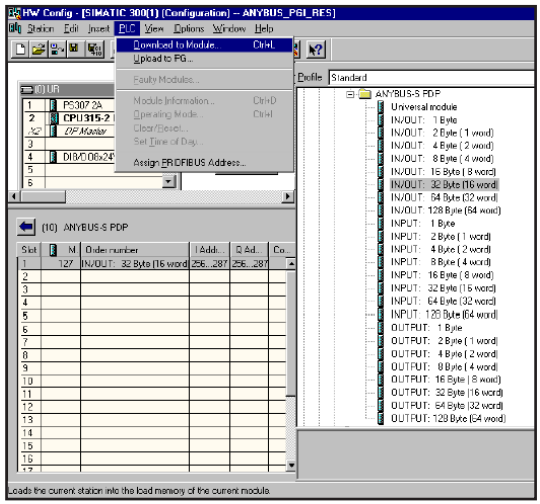




9. Once the I/O is configured, your module is properly configured choose **PLC>DOWNLOAD TO MODULE...**

10. Follow the on-screen prompts and you are finished.

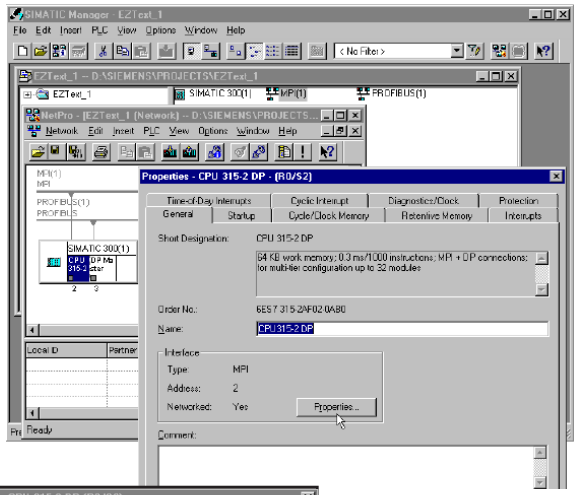
11. Return to **EZ Series Touch Panel Editor Programming Software** and begin creating your EZ Series Touch Panel project.



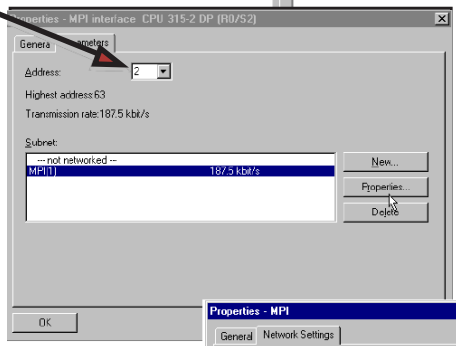
Siemens S7 MPI Adapter PLC Communications Setup

The following screens provide you with an example of how to set up a Siemens S7 MPI Adapter with Siemens' 3964R Protocol.

Using the Siemens Step 7 Programming Software, open your project and proceed to the **MPI Interface Setup** Screen.

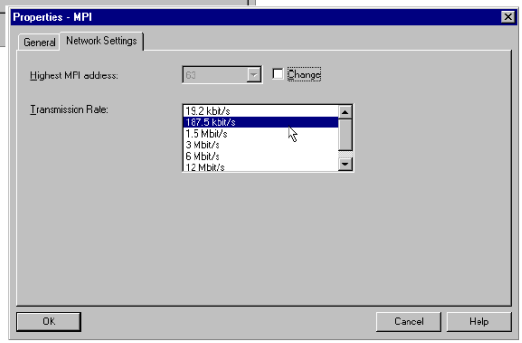


Click on the **Properties** button, then click on the **Parameters** tab, and set the MPI **Address** to 2.



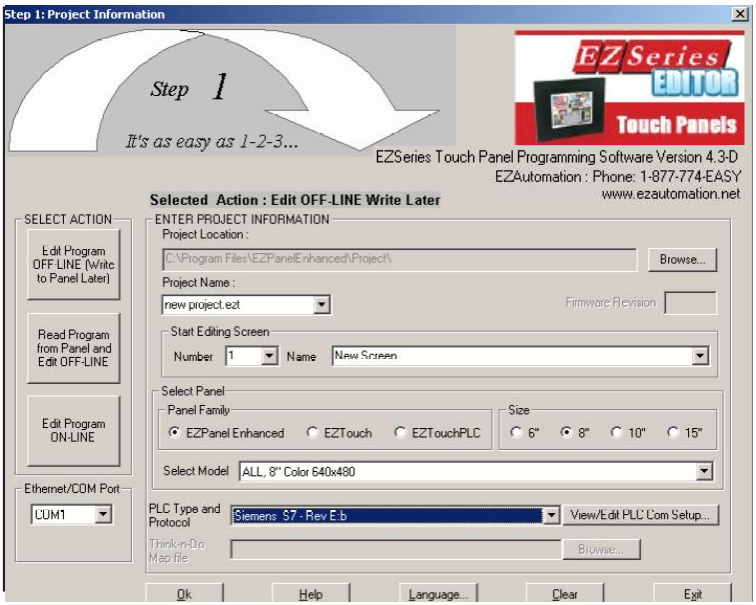
Click on the **Properties** button, then click on the **Network Settings** tab.

Set the **Transmission Rate** to 187.5 kbit/s.



Open EZ Series Editor Programming Software and configure **Project Information** as shown in the following figure.

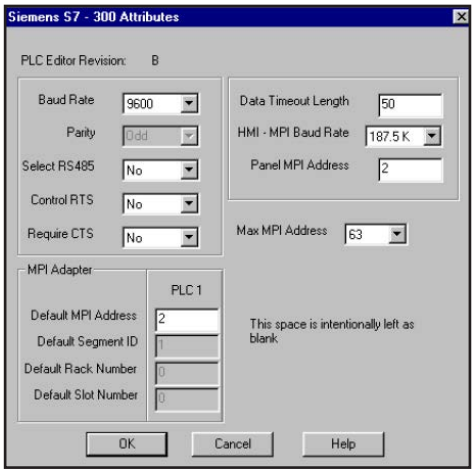
After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC



Attributes dialog box will appear. Enter the parameters shown.

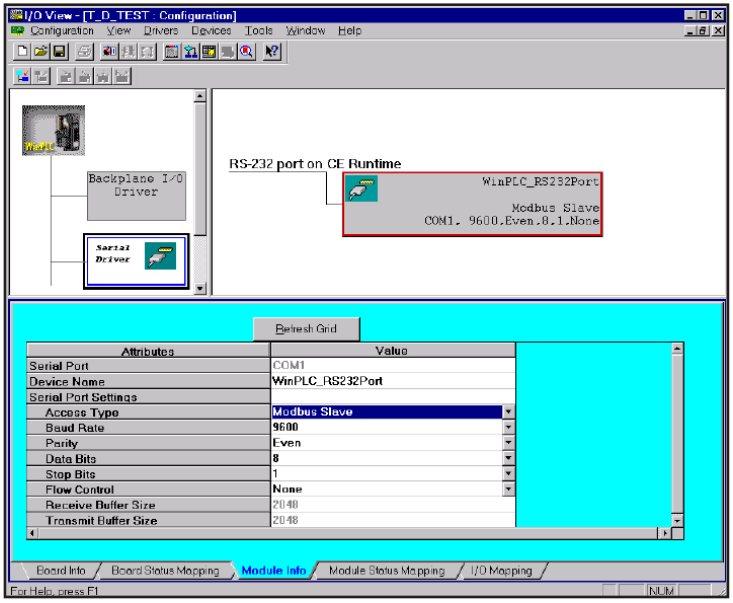
Click on the **OK** button to save your selections. You will return to the **Project Information** screen.

Click on the **OK** button to begin creating your EZ Series Project.



Entivity's Think & Do (WinPLC) Communications Setup

The following screens provide you with an example of how to set up a Think & Do (WinPLC) Project with Modbus RTU Protocol. To set up the PLC using Think & Do configuration software, program the PLC Communications Serial Port Setup screen as shown below.

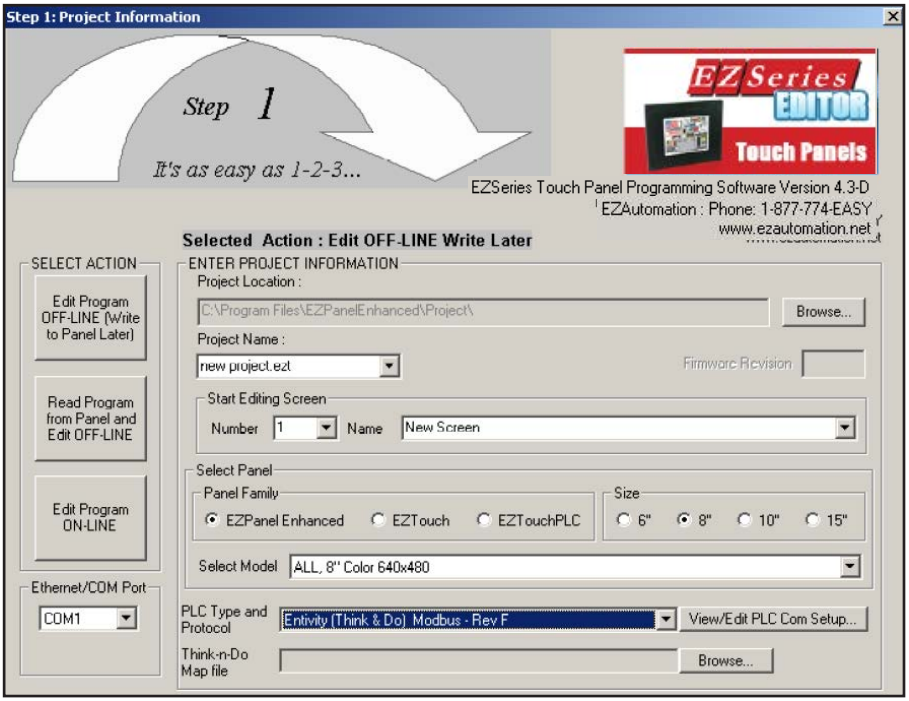


Data Types that EZ Series Touch Panel Editor Programming Software can import from Think & Do Software:

Think & Do Live	Think & Do Studio
Flag	Flag
Number	Number
Input	Input
Output	Output
Counter	N/A
Float	Float*
	String**

**Think & Do Studio supports double-precision (64-bit) floating point numbers. However, EZ Series Touch Panel Editor Programming Software only supports single precision (32-bit) floating point numbers. This means that the panel cannot display numbers greater than seven digits. Anything larger will be rounded into an exponent number.*

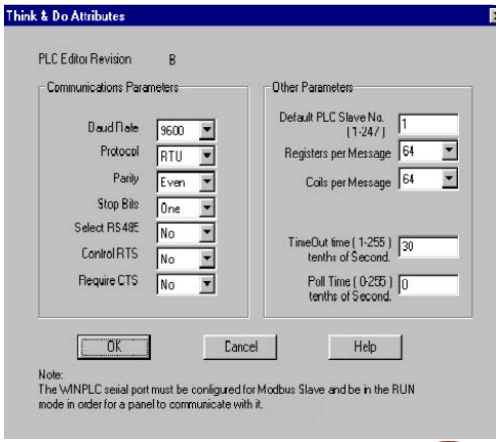
***Go to www.entivity.com for software version 6.311 (or later) that will support strings. The maximum number of characters that the string data type will handle is 40.*



How do I import a Think & Do Map file into an EZ Series Touch Panel Project?

1. Start the EZ Series Touch Panel Software and select **EDIT PROGRAM OFF-LINE (Write to panel later).** From here you can either create a NEW project or EDIT an EXISTING project. If you are creating a new project proceed to step 2, below. If you are editing an existing project proceed to step 3, below.

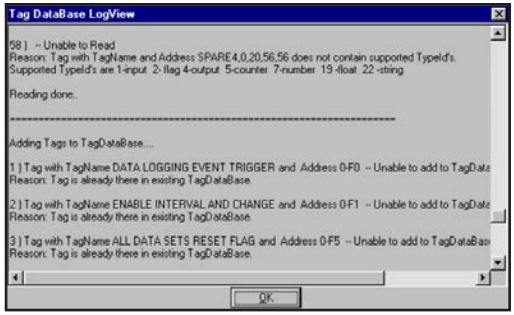
2. Enter the name of your new project into the **Project Name** field and press ENTER.



3. Select the **Panel Type** that you are using.

4. Select the **PLC Type and Protocol** for the Think N Do **— Entivity (Think & DO) Modbus - Rev B—** driver.

5. Click on the **View/Edit PLC Com Setup** button. The PLC Attributes dialog box will appear (shown to the right). Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the Project Information screen.



6. Once the Think & Do driver is selected, the **Think-n-Do Map file** field is available. In this field type the path where your Think & Do map file can be found or click on the **Browse** button and navigate to its location.

7. Click the **OK** button. EZ Series Touch Panel Editor Programming Software will load and convert your Think & Do map so it can be used by the EZ Series Touch Panel project.

   NOTE: Once in the main programming screen the software will display the **Tag Database Log View** dialog box showing the tags that could not be converted. These tags could not be converted because they were not one of the 7 commands supported by EZ Series Touch Panel. The supported commands are Counter, Flag, Float, Input, Number, Output, and String.

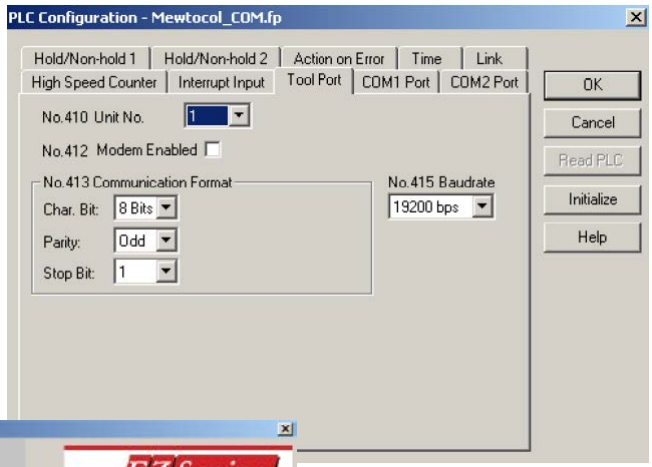
Aromat PLC
Mewtocol Protocol

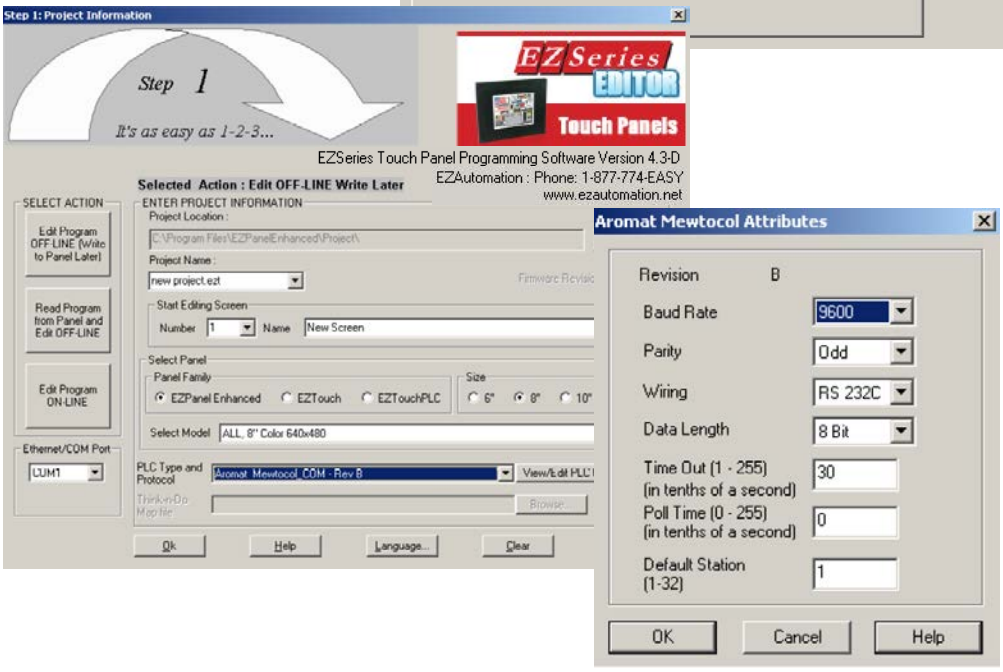
The following screens provide you with an example of how to set up a Mewtocol Protocol.

To set up the Aromat PLC (Mewtocol Protocol) using FP Win GR configuration software, program the Channel Configuration screen as shown to the right.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.





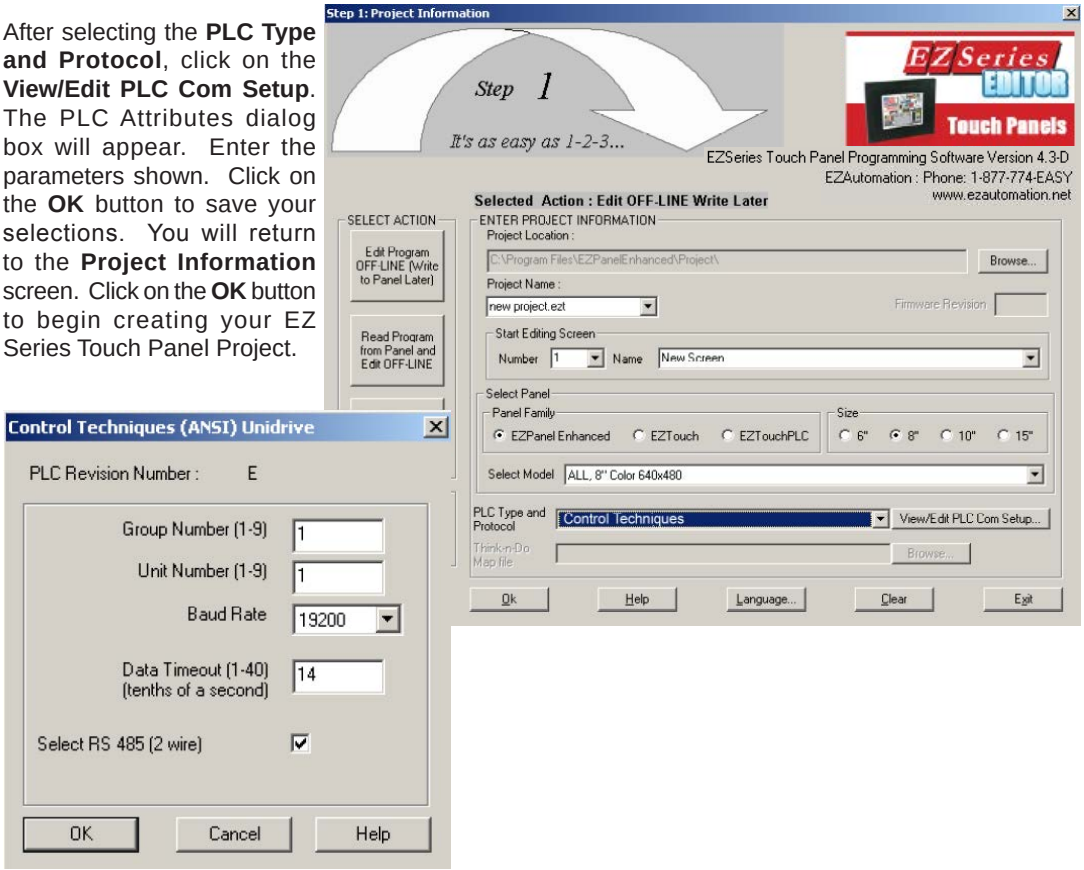
Control Techniques

Uni Drive 2-wire, 4-wire (binary)

The following screens provide you with an example of how to set up a Uni Drive 2-wire, 4-wire Protocol.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.



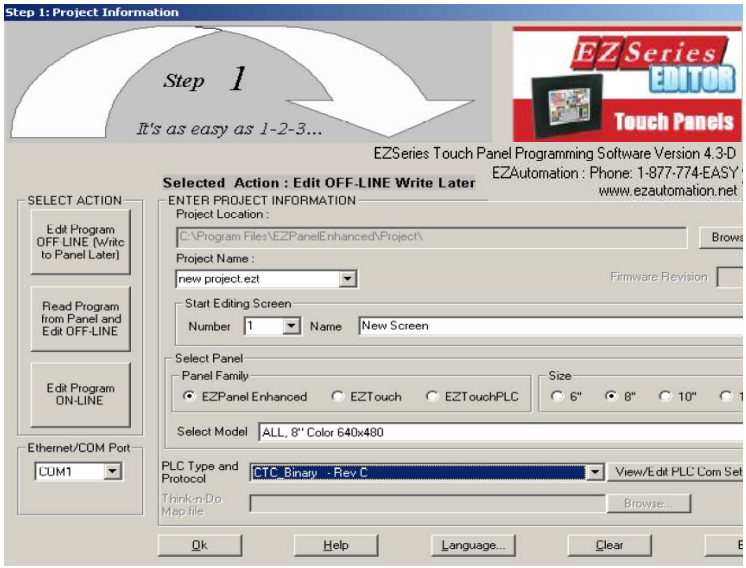
Control Technology Corporation (CTC)

CTC2600, 2700, and 5100 (CTC Binary)

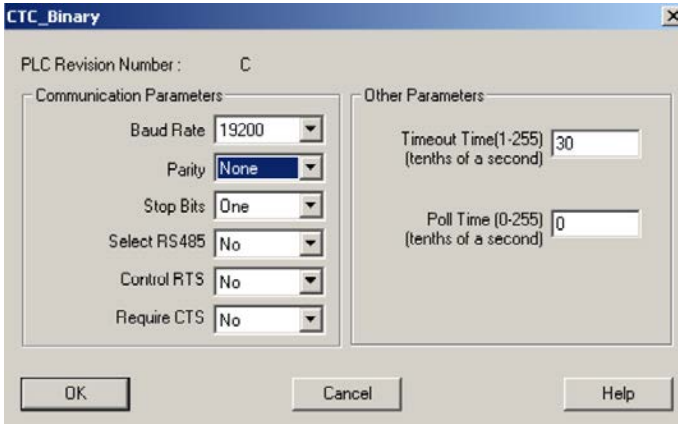
The following screens provide you with an example of how to set up a CTC2600, 2700, and 5100 CTC Binary Protocol.

To set up the CTC PLC (Binary) using Modasst configuration software, program the Channel Configuration screen.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.



After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.



Idec

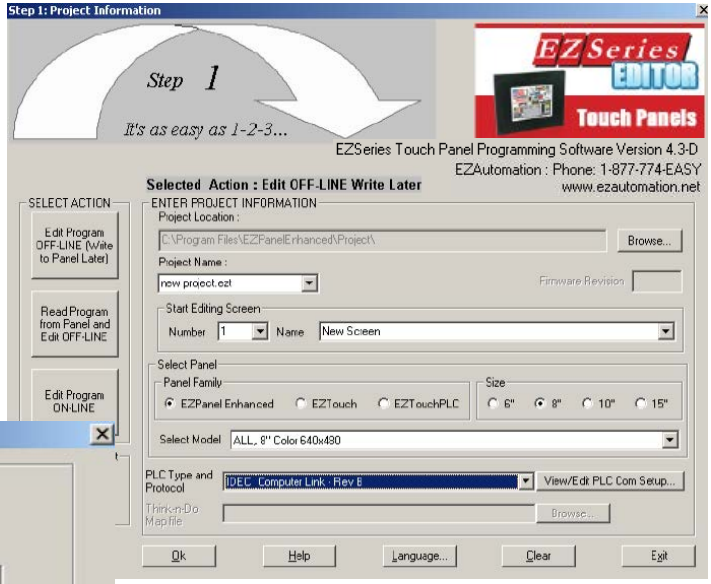
Computer Link Protocol

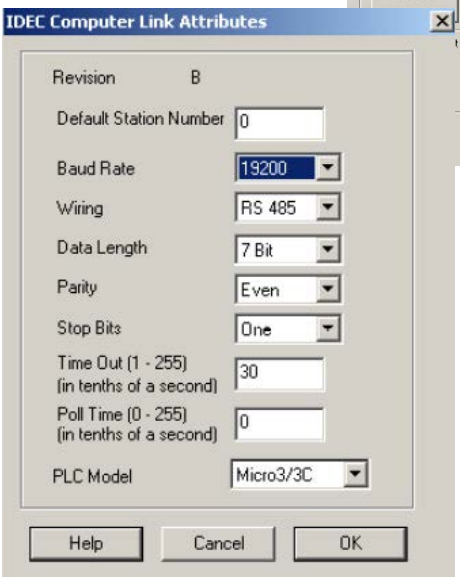
The following screens provide you with an example of how to set up a Computer Link Protocol.

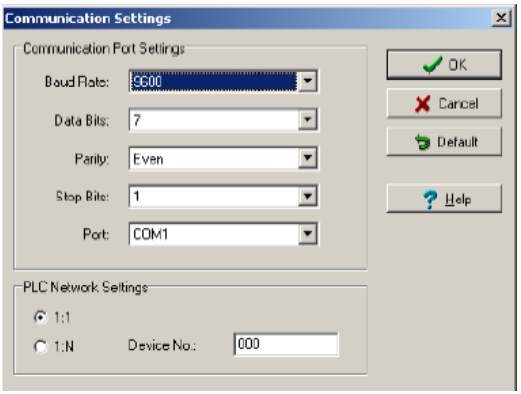
To set up the Idec PLC (Computer Link) using Idec Window Loader configuration software, program the Channel Configuration screen.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/ Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.







Mitsubishi CC Link

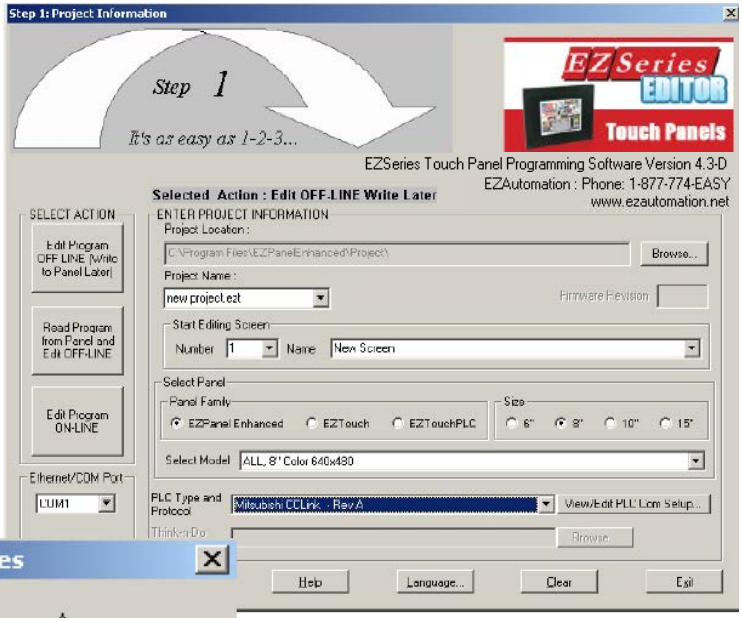
CC Link Protocol

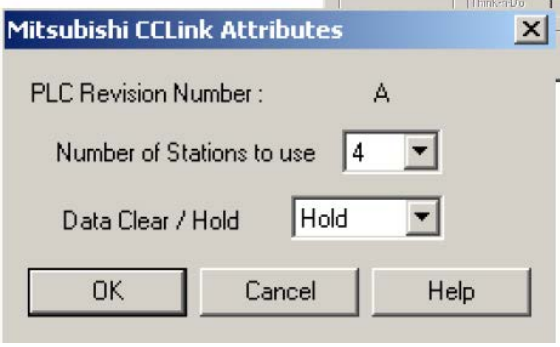
The following screens provide you with an example of how to set up a CC Link Protocol.

To set up the Mitsubishi PLC (CC Link) using GX Developer configuration software, program the Channel Configuration screen.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.





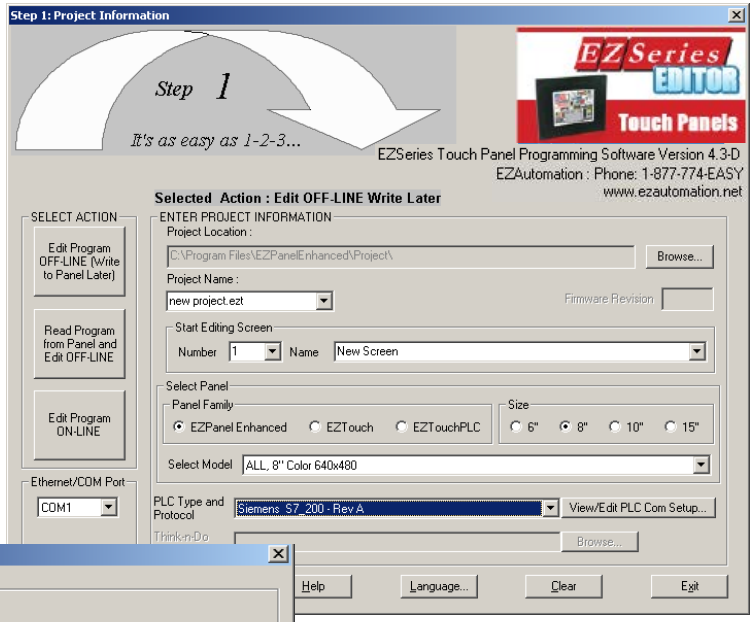
Siemens

S7_200 Protocol

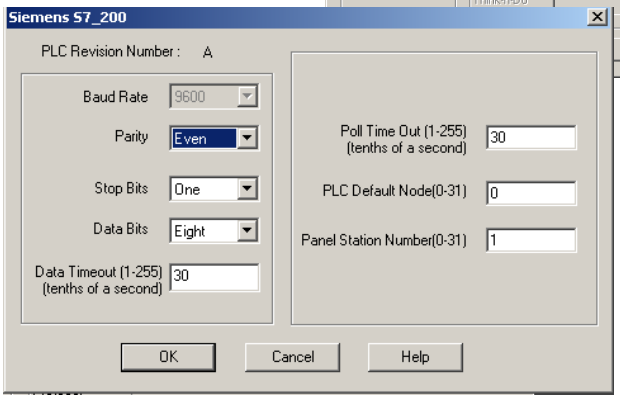
The following screens provide you with an example of how to set up a Siemens S7_200 Protocol.

To set up the Siemens S7_200 PLC using Step 7 configuration software, program the Channel Configuration screen.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.



After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel



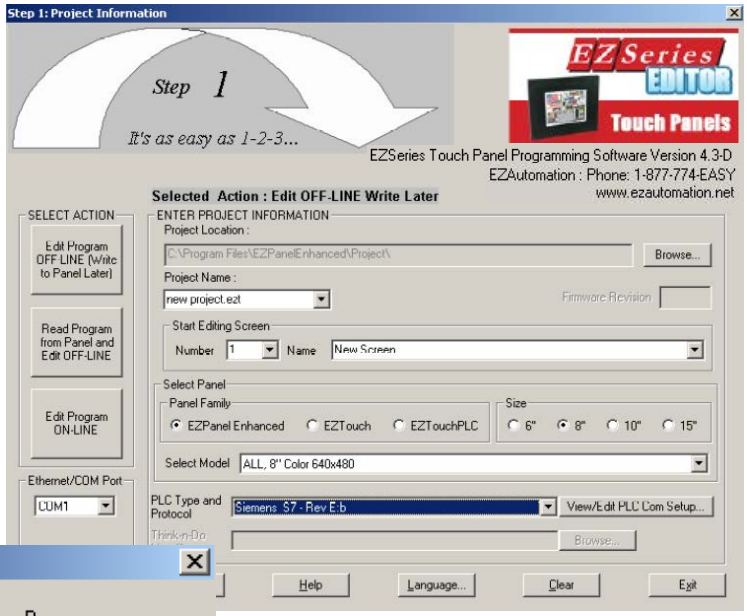
Square D Symax

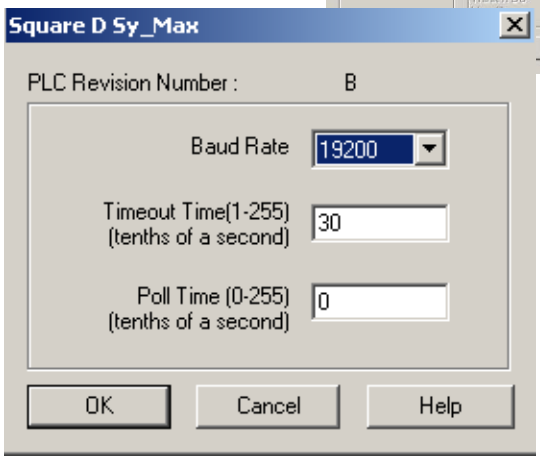
300 Series CPU, 400 Series CPU (Symax) Protocol

The following screens provide you with an example of how to set up a 300 Series CPU or 400 Series CPU using Symax Protocol.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.





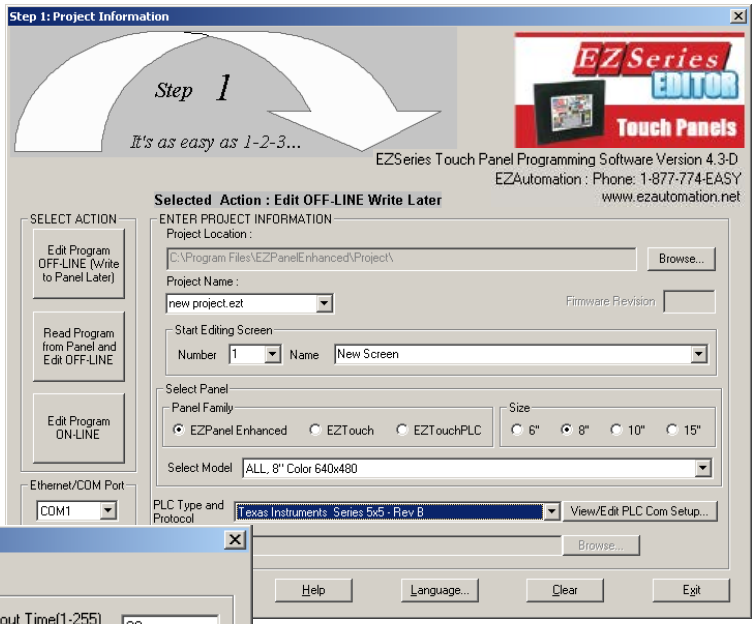
Texas Instruments

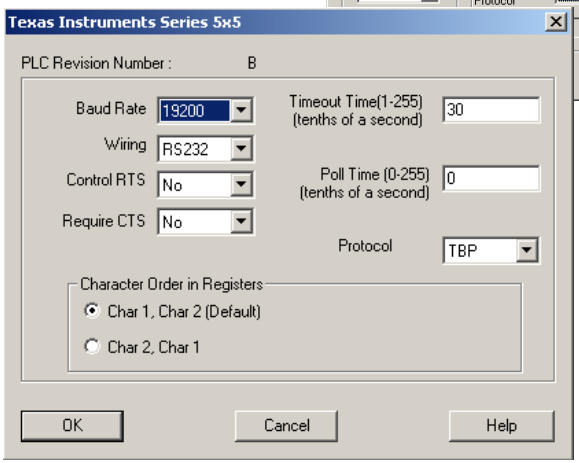
TI5x5 Series, TI505, TI545-1102, TI545-1104 (Transparent Byte Protocol or Non-Intelligent Terminal Protocol)

The following screens provide you with an example of how to set up a TI5x5, TI505, TI545-1102, and TI545-1104 Protocol.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.





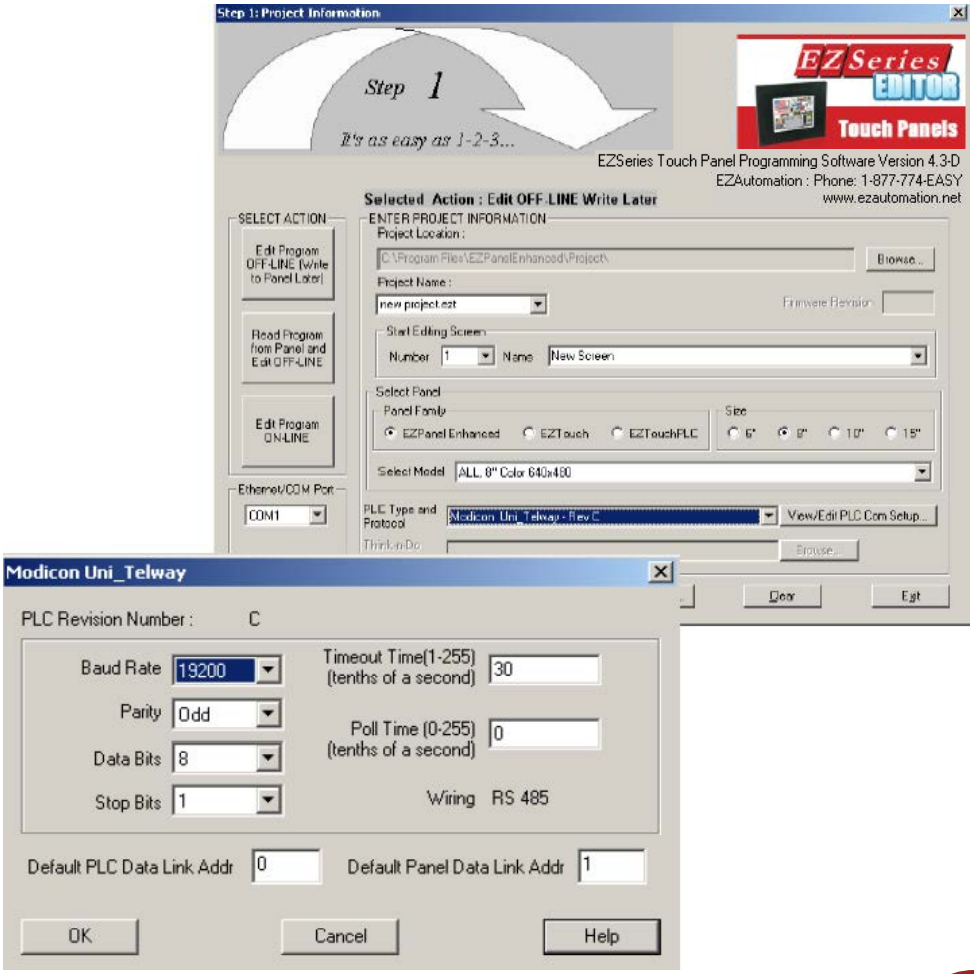
Modicon Communications Setup

Uni Telway Protocol

The following screens provide you with an example of how to set up a Uni Telway Protocol.

Open EZ Series Touch Panel Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The PLC Attributes dialog box will appear. Enter the parameters shown. Click on the **OK** button to save your selections. You will return to the **Project Information** screen. Click on the **OK** button to begin creating your EZ Series Touch Panel Project.

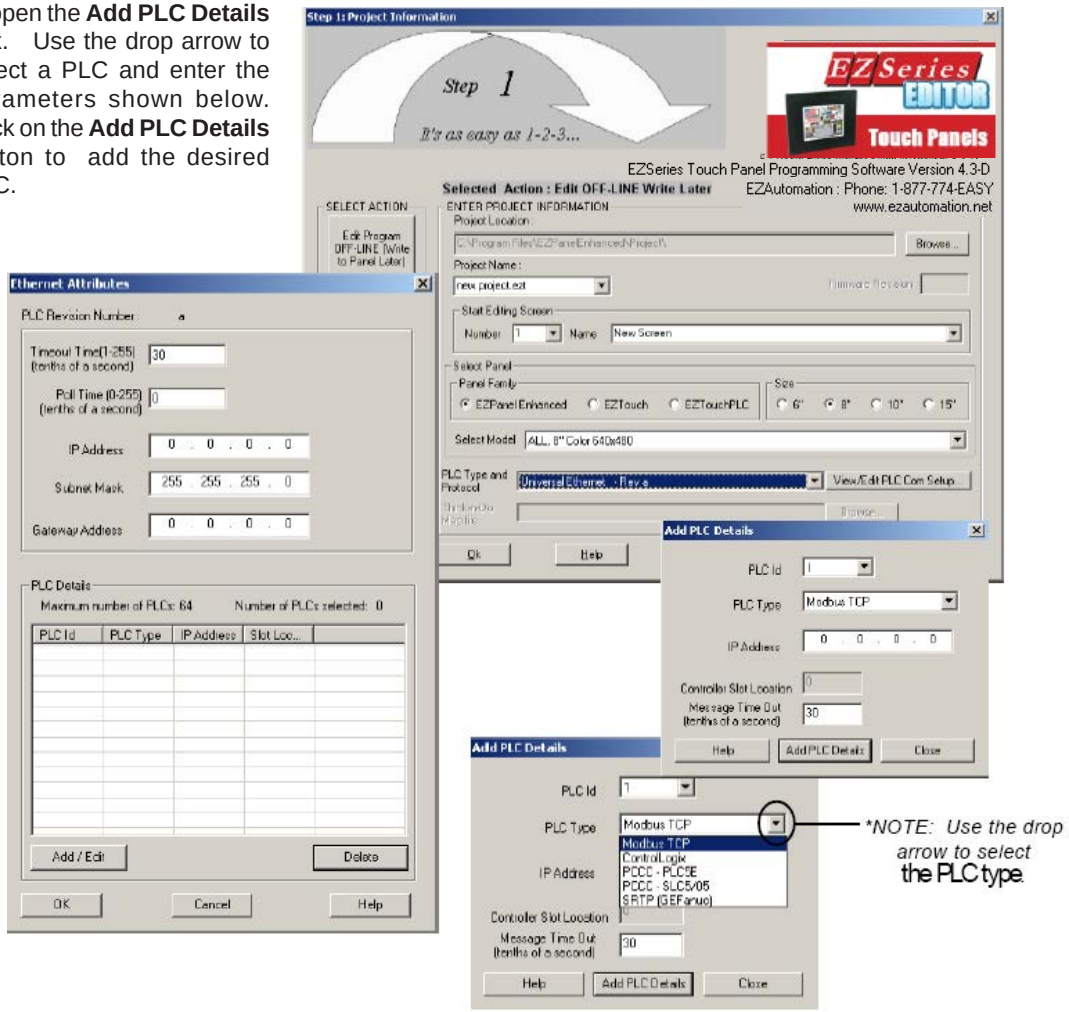


Universal Ethernet: DF1 for AB, I/P for ControlLogix SRTP for GE and Modbus TCP/IP

The following screens provide you with an example of how to set up DF1 for AB, I/P for ControlLogix SRTP for GE and Modbus TCP/IP Protocol.

Open EZ Series Touch Panel Editor Programming Software and configure Project Information as shown in the figure below.

After selecting the **PLC Type and Protocol**, click on the **View/Edit PLC Com Setup**. The Ethernet Attributes dialog box will appear. Enter the parameters shown below. Click on the **Add/Edit** button to open the **Add PLC Details** box. Use the drop arrow to select a PLC and enter the parameters shown below. Click on the **Add PLC Details** button to add the desired PLC.



D

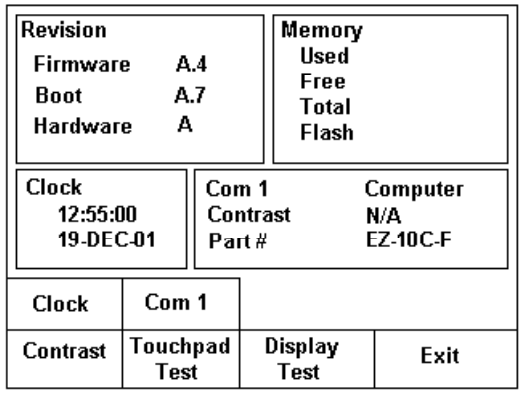
Setting COM1 for a Printer

In this Appendix....

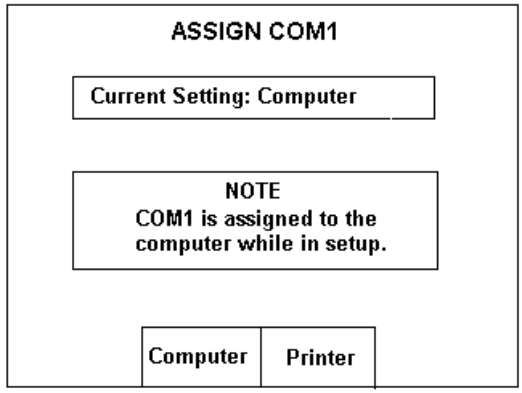
— Instructions

Setting COM1 for Printer

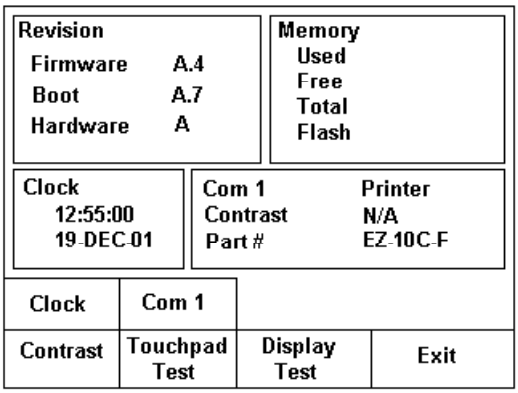
1. Place the panel into Setup Mode by pressing the upper left and lower left corners of the touch screen simultane ously. When the panel is in Setup Mode, the following screen will appear.



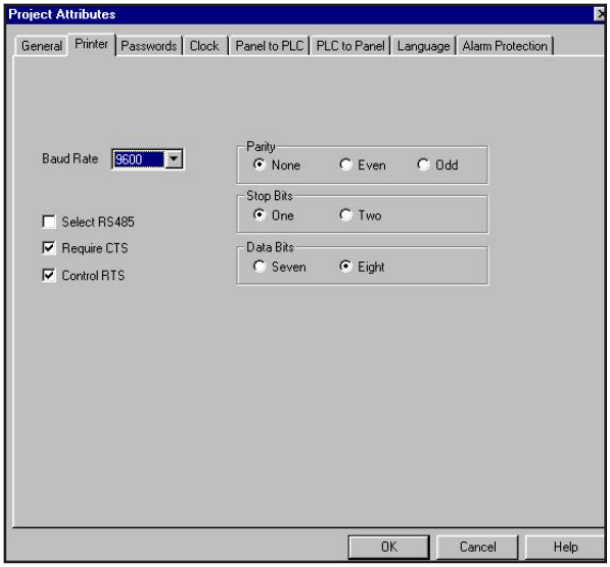
2. Press the COM1 button. When the COM1 button is pressed, the following screen will appear.



3. Press the Printer button to assign COM1 as a printer port. When you press the Printer button, the panel will return to the Main Setup screen as shown on the next page.



COM1 will now read Printer. The panel is now set up to recognize a printer.



NOTE: You must set up the communication parameters for your printer using EZ Series Touch Panel Editor Programming Software.

The communication parameters must be set in the Project Attributes windows of your EZ Series Touch Panel Project. From the Main Menu, go to Setup > Project Attributes and click on the Printer tab. The window shown to the left will appear.

You must match the communication settings in EZ Series Touch Panel to that of the printer that you are using. Those settings can usually be found in the printer's hardware/user manual.

The objects that can be printed from the panel are Messages from the Message Database (Lookup Text Object), Alarms, and Messages from the Multi-state Indicator.

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